

**FDRE  
MINISTRY OF WATER AND ENERGY  
NATIONAL DISASTER RISK MANAGEMENT  
COMMISSION**

**INTEGRATED DISASTER RISK  
MANAGEMENT PROJECT (IDRMP)**

**ENVIRONMENTAL AND SOCIAL  
MANAGEMENT FRAMEWORK (ESMF)**

**Addis Ababa, April 2022**

# Contents

<b>CONTENTS .....</b>	<b>I</b>
<b>LIST OF TABLES .....</b>	<b>III</b>
<b>LIST OF FIGURES.....</b>	<b>III</b>
<b>LIST OF ACRONYMS .....</b>	<b>IV</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>VIII</b>
<b>1 BACKGROUND .....</b>	<b>1</b>
1.1 PURPOSE, OBJECTIVES AND PRINCIPLES OF THE ESMF .....	1
1.2 APPROACH AND METHODOLOGY .....	3
<b>2 DESCRIPTION OF THE PROJECT .....</b>	<b>5</b>
2.1 PURPOSE AND OBJECTIVE OF THE PROJECT .....	5
2.2 PROJECT DESCRIPTION .....	5
2.3 PROJECT BENEFICIARIES .....	8
2.4 PRIORITY BASIN LEVEL SUBPROJECTS.....	11
<b>3 RELEVANT POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK.....</b>	<b>13</b>
3.1 POLICY FRAMEWORK.....	13
3.2 INSTITUTIONAL ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND MANAGEMENT .....	32
3.3 APPLICABLE INTERNATIONAL CONVENTIONS AND PROTOCOLS ENDORSED BY ETHIOPIA .....	45
3.4 ENVIRONMENT AND SOCIAL STANDARDS (ESSs) RELEVANT TO THE PROPOSED PROJECT .....	47
3.5 RELEVANT WORLD BANK EHS GUIDELINES FOR THE INTEGRATED FLOOD RISK MANAGEMENT PROJECT .....	50
3.6 GAP ANALYSIS BETWEEN THE NATIONAL REGULATIONS AND ESSs .....	52
<b>4 ENVIRONMENTAL AND SOCIAL BASELINE .....</b>	<b>61</b>
4.1 AWASH RIVER BASIN.....	67
4.2 RIFT VALLEY LAKES BASIN .....	77
4.3 OMO-GIBE RIVER BASIN.....	86
<b>5 VULNERABLE GROUPS AND UNDERSERVED PEOPLES IN THE PROJECT BASINS .....</b>	<b>95</b>
5.1 WOMEN.....	95
5.2 PASTORAL AND AGRO-PASTORAL GROUPS .....	96
5.3 UNEMPLOYED AND UNDEREMPLOYED RURAL YOUTHS.....	98
5.4 OCCUPATIONAL MINORITIES.....	99
<b>6 ESMF IMPLEMENTATION PROCESS, MONITORING AND REPORTING .....</b>	<b>100</b>
6.1 ESMF IMPLEMENTATION PROCESS .....	100
6.2 INFORMATION DISCLOSURE .....	109
6.3 PUBLIC DISCLOSURE PLAN.....	110
<b>7 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES .....</b>	<b>111</b>
7.1 POSITIVE IMPACT .....	111
7.2 POTENTIAL ENVIRONMENTAL IMPACTS AND RISKS AND RECOMMENDED MITIGATION MEASURES.....	113

7.4	POTENTIAL SOCIAL IMPACTS AND PROPOSED MITIGATION MEASURES .....	142
7.5	ENVIRONMENTAL AND SOCIAL MONITORING PLAN .....	183
<b>8</b>	<b>PUBLIC AND STAKEHOLDER CONSULTATIONS AND DISCLOSURE .....</b>	<b>233</b>
8.1	BACKGROUND AND RATIONALE FOR CONSULTATIONS .....	233
8.2	ISSUES DISCUSSED DURING CONSULTATIONS AT COMMUNITY LEVEL .....	233
8.3	BRIEF SUMMARY OF THE PREVIOUS STAKEHOLDERS' ENGAGEMENT ACTIVITIES.....	239
8.4	SUMMARY OF OUTCOMES OF STAKEHOLDERS CONSULTATIONS AT FEDERAL LEVEL .....	239
8.5	COVID-19 PROTOCOL DURING CONSULTATION.....	242
8.6	DISCLOSURE OF ESMF AND OTHER ESS INSTRUMENTS.....	244
<b>9</b>	<b>GRIEVANCE REDRESSING MECHANISMS (GRMS) .....</b>	<b>244</b>
9.1	INSTITUTIONAL SETUP OF THE GRM FOR IDRMP .....	245
9.2	GRIEVANCE REDRESS PROCEDURE .....	246
9.3	GRIEVANCE REDRESS PROCESS .....	246
9.3	GRIEVANCE REDRESSING MECHANISM FOR GBV- SEA/SH .....	248
<b>10</b>	<b>MONITORING OF ESMF IMPLEMENTATION .....</b>	<b>254</b>
10.1	PROCESS MONITORING .....	255
10.2	RESULT MONITORING .....	255
10.3	ENVIRONMENTAL AND SOCIAL MONITORING INDICATORS .....	255
10.4	ENVIRONMENTAL AND SOCIAL STANDARDS COMPLIANCE REPORTING.....	256
10.5	ENVIRONMENTAL AND SOCIAL AUDITING/REVIEW .....	257
<b>11</b>	<b>ESMF IMPLEMENTATION ARRANGEMENT AND CAPACITY BUILDING .....</b>	<b>259</b>
11.1	ESMF IMPLEMENTATION ARRANGEMENTS.....	259
11.2	CAPACITY BUILDING FOR ENVIRONMENTAL AND SOCIAL STANDARD.....	266
11.3	PROPOSED CAPACITY BUILDING TRAININGS .....	269
11.4	TECHNICAL ASSISTANCES.....	273
<b>12</b>	<b>ESMF IMPLEMENTATION BUDGET .....</b>	<b>274</b>
	<b>REFERENCES.....</b>	<b>276</b>
	<b>ANNEXES .....</b>	<b>277</b>
	ANNEX 1: ENVIRONMENTAL AND SOCIAL SCREENING CHECKLISTS.....	277
	ANNEX 2: PROPOSED ENVIRONMENTAL AND SOCIAL FIELD APPRAISAL FORM .....	284
	ANNEX 3: GUIDELINE FOR THE PREPARATION OF SITE SPECIFIC ESMP .....	286
	ANNEX 4: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) TEMPLATE .....	288
	ANNEX 5: PROCEDURES FOR CHANCE FINDS OF PHYSICAL CULTURAL RESOURCES.....	289
	ANNEX 6: GUIDELINES FOR ANNUAL REVIEWS.....	291
	ANNEX 7: PROPOSED FORM FOR ESMF REPORTING, TRAINING AND FOLLOW-UP.....	293
	ANNEX 8: SAMPLE TERMS OF REFERENCE (TOR) FOR ESIA PREPARATION .....	294
	ANNEX 9: PROPOSED GRIEVANCE REDRESS MECHANISM .....	297
	ANNEX 10: ENVIRONMENT, OCCUPATIONAL AND COMMUNITY HEALTH & SAFETY SPECIFICATIONS IN RELATION TO CONSTRUCTION AND DECOMMISSIONING .....	299
	ANNEX 11: GUIDANCE FOR SUB-PROJECT RISK CATEGORIZATION .....	306
	ANNEX 12: ACCIDENT/INCIDENT RECODING, REPORTING AND RESPONDING GUIDELINE IN FINANCED SUB-PROJECTS .....	310

<b>ANNEX 13: OUTLINE OF ESIA REPORT.....</b>	<b>320</b>
<b>ANNEX 14: FORMAT OF AN ANNUAL AND QUARTERLY REPORTS .....</b>	<b>322</b>
<b>ANNEX 15: SEA/SH RISK ASSESSMENT, AND PREVENTION AND RESPONSE ACTION PLAN .....</b>	<b>323</b>
<b>ANNEX 16: MINUTES OF THE COMMUNITY CONSULTATION.....</b>	<b>333</b>
<b>ANNEX 17: LIST OF COMMUNITY CONSULTATION PARTICIPANTS.....</b>	<b>335</b>

## List of Tables

TABLE 1: TYPES OF SUBPROJECTS WITH RELEVANCE TO SAFEGUARDS PER BASIN AND THEIR STATUS .....	12
TABLE 2: ENVIRONMENTAL GUIDELINES PREPARED BY EFCCC .....	31
TABLE 3: SUMMARY OF EXISTING INSTITUTIONS THAT HAVE LEGISLATIONS FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT INSTRUMENTS AT REGIONAL LEVEL.....	43
TABLE 4: GAP ANALYSIS BETWEEN THE NATIONAL REGULATIONS AND ESSs.....	52
TABLE 5: POPULATION BY ADMINISTRATIVE UNITS IN THE RVLB (2021) .....	81
TABLE 6: POPULATION BY ADMINISTRATIVE UNITS IN THE OMO-GIBE BASIN (2021) .....	92
TABLE 7: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) – ENVIRONMENTAL ASPECTS .....	128
TABLE 8: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN – SOCIAL ASPECTS .....	170
TABLE 9: ENVIRONMENTAL MONITORING PLAN .....	183
TABLE 10: SOCIAL MONITORING PLAN .....	202
TABLE 11: SUMMARY OF ESMF IMPLEMENTATION ARRANGEMENT .....	262
TABLE 12: PROPOSED CAPACITY BUILDING TRAINING SCOPE AND SCHEDULES.....	271
TABLE 13: ESMF IMPLEMENTATION BUDGET (USD) .....	274

## List of Figures

FIGURE 1: IDRMP IMPLEMENTATION ARRANGEMENT.....	11
FIGURE 2: RIVER BASINS OF ETHIOPIA .....	62
FIGURE 3: SOME OF THE PROTECTED AREAS IN AWASH RIVER BASIN.....	71
FIGURE 4: SOME OF THE PROTECTED AREAS IN RIFT VALLEY LAKES BASIN.....	81
FIGURE 5: SOME OF THE PROTECTED AREAS IN OMO-GIBE RIVERS BASIN .....	90
FIGURE 6: ESMF IMPLEMENTATION ARRANGEMENT.....	261

## **List of Acronyms**

AGP	Agricultural Growth Program
BDA	Basin Development Authority
BMC	Billion Meter Cube
BOD	Biological Oxygen Demand
CDC	Center for Disease Control
CEDAW	Convention on Elimination of All Forms of Discrimination against Women
CERC	Contingent Emergency Response Component
CHMP	Cultural Heritage Management Plan
CRC	Compensation and Resettlement Committee
CRV	Central Rift Valley
CSA	Central Statistics Agency
DA	Development Agency
DD	Detailed design
DEVAW	Declaration on the Elimination of Violence against Women
DFIL	Disbursement and Financial Information Letter
DO	Dissolved oxygen
DRF	Disaster Risk Financing
DRM	Disaster Risk Management
EDHS	Ethiopian Demographic and Health Survey
EDRMC	Ethiopian Disaster Risk Management Commission
EEPC	Ethiopian Electric and Power Corporation
EFCCA	Environment, Forest and Climate Change Authority
EFCCB	Environment, Forest and Climate Change Bureau
EFCCC	Environment Forest and Climate Change Commission
EHS	Environement Health and safety
EIA	Environmental Impact Assessment
EM	Emergency Management
EMI	Ethiopian Meteorological Institute
EPA	Environmental Protection Agency
EPE	Environmental Policy of Ethiopia
EPFCCC	Environmental protaction forest and Climate change Commision
EPHI	Ethiopian Public Health Institute
EPLUA	Environmental Protection, Land Use, and Administration
ESA	Environmental and Social Assessment
ESCP	Environmental and Social Commitment Plan
ESF	Environment and Social framework
ESIA	Environmental and Social Impact Assessment

ESMF	Environment Social Management Framework
ESMP	Environmental and Social Management Plan
ESRS	Environmental and Social Review Summary
ESS	Environmental and Social Standard
ESSA	Environmental and Social System Assessment
FDRE	Federal Democratic Republic of Ethiopia
FPIC	Free Prior and Informed Consent
FS	Feasibility Study
FSC	Federal Steering Committee
GBV	Gender Based Violence
GDP	Gross Domestic Product
GM	Gender Management
GOE	Government of Ethiopia
GPS	Global Position System
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GWh	Gega Watt Hour
IA	Implementing Agency
IAs	Implementing Agencies
ICU	Intensive Care Unit
IDRMP	Integrated Disaster Risk Management Project
IEC	Information, Education and Communication
IFAD	International Fund for Agricultural Development
IFRM	Integrated Flood Risk Management
IP	Implementing Partners
IPF	Investment Project Financing
IPMP	Integrated Pest Management Plan
ITCZ	Inter-tropical Convergence Zone
KDC	<i>Kebele</i> Development Committees
LFSDP	Livestock and Fisheries Sector Development Project
LMP	Labor Management Procedure
M&E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoCS	Ministry of Culture and Sport
MoH	Ministry of Health
MoT	Ministry of Tourism
MoUI	Ministry of Urbanization and Infrastructure
MoWE	Ministry of Water and Energy
MoWSA	Ministry of Women and Social Affairs
NBP	National Biodiversity Policy
NBSAP	National Biodiversity Strategy and Action Plan

NDRMC	National Disaster Risk Management Commission
NGO	Non-Governmental Organization
NMA	National Meteorological Agency
NPC	National Project Coordinator
NPP	National Population Policy
NPW	National Policy of Woman
NRM	Natural Resource Management
NSPS	National Social Protection Strategy
OESRC	Operations Environmental and Social Review Committee
OHS	Occupational Health and Safety
OHSC	Occupational Health & Safety and Community
OHSP	Occupational Health & Safety Plans
OP	Operational Program
PAPs	Project Affected Population
PCU	Project Coordination Unit
PDO	Project development Objective
PET	Potential Evapo-Transpiration
PFU	Project Focal Unit
PME	Participatory Monitoring and Evaluation
PMP	Pest Management Plan
PMU	Project Management Unit
POM	Project Operations Manual
POPs	Persistent Organic pollutants
PPE	Personal Protective Equipment
PSNP	Productive Safety Net Program
RAP	Resettlement Action Plan
REPAs	Regional Environmental Protection Agencies
REFCCA	Regional Environment Protection, Forest and Climate Change Authority
RPCU	Regional Project Coordination Unit
RPF	Resettlement Policy Framework
RVLB	Rift valley lakes Basin
SA	Social Assessment
SAE	Sexual Abuse and Exploitation
SBD	Standard Bidding Document
SC	Steering Committee
SDEs	Sustainable Development Goals
SDP	Social Development Plan
SEA	Sexual Exploitation and Abuse
SEA	Social and Environmental Assessment
SECAP	Social, Environmental, and Climate Assessment Procedures

SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SLMP	Sustainable Land Management Project
SNNPR	Southern Nations, Nationalities and Peoples Region
SSAHUTLC	Sub-Saharan African Historically Underserved Traditional Local Communities
STD	Sexually Transmitted Diseases
TA	Technical Assistance
TC	Technical Committee
TGE	Transitional Government of Ethiopia
TOR	Terms of Reference
ToT	Training of trainers
ULG	Urban Local Government
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
VCT	Voluntary Counselling and Testing
WASH	Water, Sanitation, and Hygiene
WB	World Bank
WHO	World Health Organization
WPS	Wildlife Policy and Strategy



# **Executive Summary**

## **Introduction and Project Background**

The Government of Ethiopia through the Ministry of Water and Energy requested credit facility from the World Bank for investment in both structural works and non-structural measures towards improving flood risks on the three priority basins (Awash River Basin, Rift Valley Lakes Basin and Omo Gibe River Basin). Integrated Disaster Risk Management Project (DRMP) is a five-year project with the purpose providing long term solutions to flooding and associated challenges facing the communities in the flood prone areas within these basins.

The proposed project has the following four components and sub-components:

### **Component 1: Strengthening institutional and coordination capacity for DRM**

This component aims to meet the following objectives

- Strengthen institutional and coordination capacity among federal level agencies (including various sectors) and between federal and decentralized levels of the Government for improved DRM;
- Strengthen federal and regional DRM coordination;
- Meet the EDRMC's duties and responsibilities as stated in Regulation No.363/2015 by collecting and compiling nationwide action plans for the implementation of DRM policy and strategy, regularly monitor and evaluate their implementation, and submit bi-annual performance reports to the DRM Council;
- Enhance data sharing capacities that are critical to improve DRM coordination, particularly to facilitate the integration of hazard risk information for spatial planning and development to better inform decision-making;
- Support mainstreaming of DRM in key sectors.

### **Component 2: Accelerating flood risk management**

This component focuses on physical investments to reduce flood risks and technical assistance and capacity development to facilitate integrated flood risk management. The component will also implement strategic studies for future physical investments and provide technical assistance for operationalization and sustainability of physical investments.

#### **Sub-component 2.1: Basin-level flood risk reduction investments**

This sub-component will focus on basin-level physical flood risk reduction investments. Through this sub component a framework approach will be applied to identify and prioritize the sub-projects for physical flood risk reduction investments, both spatially and by range of technical, economic, financial, and socio-economic criteria during implementation.

**Sub-component 2.2: Hydromet services and impact-based early warning systems**

This sub-component will support: (a) improvements in the quality of select hydromet services; and (b) the development and operationalization of impact-based flood early warning systems for prioritized locations within the three priority basins.

**Sub-component 2.3: Community-level flood preparedness and awareness raising**

Under this subcomponent participatory and action-oriented capacity building and awareness raising activities on flood preparedness for select high flood risk areas in the three priority river basins at the community level will be conducted.

**Sub-component 2.4: Strategic studies for future investments and capacity building for urban flood risk management**

This sub-component will focus on strategic studies for future investments for flood risk reduction in the Strategic study basins and selected urban areas.

**Component 3: Contingent emergency response**

Under this component the recipient may request the Bank to re-allocate project funds to support emergency response and reconstruction.

**Component 4: Project management and implementation support**

This component will support strengthening the institutional capacities for Project management and implementation support as well as operating costs incurred by implementing agencies on technical, environmental and social, fiduciary, gender, citizen engagement, monitoring and evaluation aspects of Project activities.

**Objective of the Environmental and Social Management Framework (ESMF)**

As an integral part of the design of the IDRMP, it was found necessary to prepare an Environmental and Social Management Framework (ESMF) which can serve as a safeguard instrument in ensuring that the environmental and social impacts and risks of subprojects to be financed under the Project are properly considered during subproject planning and implementation.

The main objective of the ESMF is to establish a unified process that meets the National Environmental requirements and World Bank Environmental and Social Framework (ESF) principles applicable for addressing environmental and social risks of IDRMP subprojects. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social risks and impacts of the Project. Its purpose is to provide general guidance to program implementers found in the target basins on the implementation of environmental and social standard requirements and associated procedures that should be accomplished prior to the

commencement of and during the implementation of the IDRMP subprojects on the ground.

### **Legal and Policy Framework for the Implementation of ESMF**

The Government of Ethiopia (GoE) has enacted the necessary legal frameworks for environmental and social management and institutions to support implementation and enforcement of the environmental and social safeguard measures. The primary legislations that support environmental and social management in Ethiopia are the FDRE Constitution, Environmental Policy of Ethiopia, Environmental Impact Assessment Proclamation No. 299/2002, Solid Waste Management Proclamation No. 513/2007; Research and Conservation of Cultural Heritage Proclamation No. 209/2000; the Labor Proclamation No. 1156/2019, Proclamation No.1161/2019 on Expropriation of Land for Public Purposes, Environmental Impact Assessment Procedural Guideline (2003); Environmental and Social Management Plan Preparation Guideline (2004); National Social Protection Policy; National Policy on Ethiopian Women; and other Laws, Strategies, and Guidelines Enforcing Special Support for Developing Regions and Vulnerable Groups.

World Bank ESF and relevant Environmental and Social Standards (ESSs), as well as the EHS guidelines are also of applicable to this project. ESS 1, 2, 3, 4,5,6,7, 8 and 10 of the World Bank are found to be applicable to the IDRMP subprojects. In addition, general EHS guidelines of the World Bank are found to be relevant to the IDRMP subprojects;

### **Project Risk Rating**

Environmental risks from this project will stem from investments such as river channel widening and the construction of embankments, dikes, levees, retention ponds/ lakes and other hydraulic structures. Accordingly, the the following are the most important environmental risks and impacts of the proposed project:

- Negative impacts due to river channel modification measure such as disruption of fish habitat by elimination of channel irregularities;
- Increased water temperature by removal of vegetation on banks and in stream;
- Increased erosion and sedimentation problems from river beds and banks
- Downstream flooding and sedimentation;
- Destruction of bank and stream side vegetation;
- Adverse effects on fisheries and other aquatic resources by disruption of migratory routes, deterioration of habitat and changes in water quality;
- Structures such as levees and dikes distructing wildlife passage;
- Loss of wildlife habitat of critical habitats (the ESMF contains provisions to screen out any sub-projects that could have significant adverse impacts on natural and critical habitats);
- Alteration of the hydrological features which can have indirect impacts to wildlife and

riverine fisheries;

- Impacts on the soil and underground water due to disposal of dredging soils.

Similarly, the potential adverse social impacts of the flood risk reduction subprojects are:

- The flood control projects may hinder the river water flows in the flood plains and may thus negatively impact the agro-pastoral pursuit of the inhabitants.
- Implementation of the envisaged flood control subprojects will entail temporary or permanent land loss and acquisition, and the risk of some displacement of farm and agro-pastoral households.
- The flood control and protection subprojects may hinder the river water flows traditionally used for purpose of irrigation agriculture and pasture in the flood plains, which may negatively impact the agro-pastoral pursuit/livelihood of the inhabitants.
- Elimination or reduction of flood plains may increase flood risk and may adversely affect riverine fisheries, and as a result of the restriction in the flow of the rivers to lakes, reservoirs and ponds that the fish production (artisanal and commercial) on which the local inhabitants of the flood plains depend may be damaged.
- The excavation of borrow and quarry sites may form stagnant water ponds and these can a source of health risks to the local people by serving as a favorable breeding site for mosquito and other communicable waterborne disease-causing parasites.
- Some of the flood risk control and reduction subprojects may be located in in zones/areas of the basins where resource-based inter-group conflict are widely prevalent, which poses medium to high insecurity.
- There is also the potential risk of elite capture in choosing, constructing and managing the operation of flood control protection subprojects where the elites exercising disproportionate control over community decisions at the expense of communities' priorities.
- Cultural, historic and archaeological heritage sites may be damaged or lost during excavations and the ensuing construction works and activities.
- The subprojects can also potentially pose a moderate risk of an environment for SEA/SH, affecting both target community members, the workforce and service users.
- There will also be the risk of influx of workers and their accompanying followers which can lead to potential adverse social impacts on local communities.
- The risk of social tension and conflicts, including those that may be induced by land acquisition/restriction of access, displacement, limits on traditional livelihood activities, and local employment opportunities.
- Impacts on irrigated cultures and associated loss of livelihoods.
- Adverse impacts on subsistence fishing.
- Occupational and community health and safety risks.

In light of the foregoing potential adverse environmental and social impacts, the overall risk of the proposed project is rated as High by the World Bank.

### **ESMF Implementation Process, Monitoring, and Reporting**

The ESMF process starts with the project activities or sub-projects. This includes identification of project activities (particularly field level activities/sub-projects) based on beneficiaries' or communities' demand. Subsequent technical support and advice will be received from the regional/local administrations to identify sub-projects under Sub-component 2.1 and to some extent Sub-component 2,3. The basin offices will further develop and prepare field level sub-projects identified by beneficiaries, communities, and regional/local administrations. Basin offices, if required, will conduct field appraisal of the proposed project activities or sub-projects (using **Annex 2**) prior to commencing environmental and social safeguards screening. For the other project components (Component 1, Sub-component 2.2, sub-component 2.4, and Component 4), the implementing agencies (MoWE, EDRMC, EMI, the basin offices, and MoUDI) will identify, prepare, and screen sub-projects. In all cases, the PMU at MoWE, PCU at EDRMC, and EMI have overall responsibility in identification, developing, preparation, and screening of the sub-projects under all project components and sub-components.

The screening process will be carried out against the pre-set criteria for eligibility of the sub-projects and environmental and social safeguards at national and/or basin levels using the screening checklist presented under **Annex 1**. The basin offices will take the responsibility of screening sub-projects developed at basin level while MoWE, EDRMC, and EMI will screen identified sub-projects at national level. Screening reports, and recommendations will be compiled and sent to the relevant environmental protection commissions, authorities, or offices for further review and approval. For sub-projects developed at basin level, regional and local/*woreda* environmental protection commissions, authorities or offices will take the responsibility of reviewing and approving the screening reports. On the other hand, for sub-projects developed at national level, either national or regional environmental commissions or authorities (depending on the sub-project type/extent) will take the responsibility of reviewing and approving the screening reports.

The environment protection commissions, authorities and offices at regional, zonal and local/*woreda* level will review the planned sub-projects developed at basin level, screening results and recommendations, and provide decisions of approval or pass recommendations if any design modifications or additional safeguards instruments are required. Similarly, for sub-projects developed at national level, federal or regional environmental commissions and authorities will process the screening reports. The final cleared and approved sub-project plan documents will be referred to the respective implementing agencies (MoWE, EDRMC, EMI, MoUDI, and basin offices) with all the enclosed environmental and social screening documents

and final decision reports.

Based on the screening results and recommendations, the implementing agencies will be responsible to oversee the implementation of the sub-projects including implementation of ES requirements. The federal, regional, and local authorities will participate in the implementation and operation of the sub-projects.

As stated above, various implementing agencies and institutions have responsibilities to manage and complete the overall process of environmental and social management and implementation of this ESMF. In summary,

- the implementing agencies (MoWE, EDRMC, EMI, MoUDI, and basin offices) will be responsible to oversee the implementation of the overall ES management including implementation of the ESMF.
- regional and local administrations will participate in field level sub-projects identification.
- the implementation agencies will be responsible for developing, preparing, and screening the sub-projects depending on the implementation level (field level sub-projects are processed mainly by the basin offices while the other implementing agencies process sub-projects at national and regional levels). Further, the implementing agencies are responsible to prepare ES instruments based on the screening results and recommendations. Guidelines for the main ES instruments preparation are provided as annexure.
- relevant federal, regional, and local/*woreda* environmental commissions, authorities and offices will be responsible in reviewing and approving screening reports and subsequent ES instruments.
- the implementation agencies are responsible for implementation of the sub-projects including implementation of the ESMF.
- Basin offices, regional, and local administrations will be responsible for operation of the sub-projects including implementation of ES requirements.

## **Potential Environmental and Social Benefits and Risks**

### **(a) Beneficial Environmental and Social Impacts**

The IDRMP has the potential to provide significant social benefits, and to deliver environmental benefits. It was observed that the overall impact of the IDRMP implementation has been very good in terms of positively influencing the life of beneficiaries by preventing flood risks of the communities in the flood risk zones within the three sub basins. The other positive social impact of the project is that it will build the capacity of the institutions in their effort to manage flood risk within the basin. The watershed management infrastructure works also improved the safety

condition of neighborhoods that were prone to rainwater flooding and landslides during rainy season and resulted in improving the environmental health conditions of participating communities.

### **(b) Biophysical Impacts**

Environmental risks from this project could stem from investments such as river channel widening and the construction of embankments, dikes, levees, retention ponds/ lakes and other hydraulic structures; . The anticipated environment risks and impacts of the project include : i) negative impacts due to river channel modification measure such as disruption of fish habitat by elimination of channel irregularities; increased water temperature by removal of vegetation on banks and in stream, increased erosion and sedimentation problems from river beds and banks, downstream flooding and sedimentation and destruction of bank and stream side vegetation; ii) cycle of enrichment and ground water recharge in flood plain soils could be adversely affected; iii) adverse effects on fisheries and other aquatic resources by disruption of migratory routes, deterioration of habitat and changes in water quality (e.g. sediment load) leading to reduced productivity of riverine fisheries; iv) structures such as levees and dikes could be obstacles to wildlife passage unless special crossing places are constructed; v) loss of wildlife habitat if critical habitats are not properly identified and if control measures are not implemented (especially where habitats or species are dependent on natural flooding regime), vi) alteration of the hydrological features which can have indirect impacts to wildlife and riverine fisheries, and vii) impacts on the soil and underground water due to disposal of dredging soils .

In the main body of the report various mitigation measures are proposed to minimize the above indicated social and environmental impacts. An indicative Environmental and Social Management Plan (ESMP) and monitoring plans are also included in the ESMF. However, these plans shall be further developed and updated for each sub-project prior to implementation. Further, C-ESMPs shall be prepared by sub-project contractors before construction commence.

### **Institutional Setup of the Grievance Redress Mechanism**

Typical grievances that are anticipated from the implementation of IDRMP program subprojects include claims and complaints due to lack of transparency in the implementation of the sub projects. The GRM procedures for the IDRMP provides for negotiation and agreement by consensus between the project and affected persons as the first avenue to resolve issues and grievances expressed by affected persons. In events where the grievance not resolved at all levels, affected party shall be advised to take the cases to the regular court for final decision. Project affected parties shall also be informed about the existing legal and formal mechanisms and be allowed to make use of them when and wherever they find it necessary.

### **Training and Capacity Building**

The current practices and experiences of the potential IDRMP implementing agencies especially at the regional level to implement the safeguard measures are generally weak. The bureaus/Agencies at regional level, except in few regions, do not have focal persons for safeguards management and coordination. They appear to be less versatile to the safeguard instruments and associated procedures. It will be therefore important for the federal implementing agencies to provide technical assistance and support to the participating regions and *woredas* that will be involved in the implementation of the sub projects. For this to happen a dependable capacity on safeguards management will need to be developed within the regional PCU. Devising financial mechanism to incentivize appropriate environmental and social safeguard focal persons employed to work on fulltime basis on the IDRMP project will be advisable.

### **Monitoring the Implementation of the ESMF**

Monitoring the compliance of IDRMP sub-project implementation with the mitigation measures will be carried out by the environment and social expert of the PMU/PCU/EMI/basin offices. The implementation of the recommended mitigating measures will also be monitored by the federal, regional, zonal, or local/*woreda* environmental protection commissions, authorities, or offices and IDRMP M&E system. A quarterly, biannual and annual environmental report will be submitted from sub-project implementing office at the *woreda* level to the Regional and Federal offices responsible for environment and the World Bank. Annual internal performance audit report on ESMF and RPF implementation will be prepared by PMU/PCU at the federal level and will be delivered to Federal environment office and the World Bank. In addition, any “High/Substantial Risk” subproject financed by IDRMP that has been subject to an ESIA study or RAP will also be required to produce an annual performance audit report, for delivery to the regional and federal level environment protection commission, authorities, and offices and the World Bank. ESMF implementation will also be supported by conducting annual environmental and social performance audit that will be carried out by a third party. This will be conducted as part of the Federal annual performance audit of the project. The external independent safeguards performance audit team will report to the Federal and regional environmental protection commission, authorities, and offices and the World Bank.

### **Budget Estimate for the Implementation of ESMF**

The total estimated costs to implement the four proposed project components are USD 150 million. These costs will be covered by World Bank and the IDRMP Environmental and Social safeguard specialist through the PMU/PCU will report on IDRMP ESMF expenditure. Cost for monitoring the implementation of the ESMF per year per sub-project is estimated to be **1,385,000 Birr (USD 27,200)** and budget estimate for capacity building during the implementation of ESMF is **1,550,000 USD**.



# 1 Background

## 1.1 Purpose, objectives and principles of the ESMF

### 1.1.1 Purpose of the ESMF

This Environmental and Social Management Framework (ESMF) is developed to support the environment and social due diligence provisions for activities financed by the World Bank Group (WBG) Ethiopia Integrated Disaster Risk Management Project (IDRMP). The framework document is prepared to serve as a framework to examine the environmental and social impacts of IDRMP subprojects to be implemented in the priority basins of Awash, Omo, and Rift Valley Lakes basins. The ESMF establishes a unified process for addressing all environmental and social standard requirements on subprojects from preparation, through review and approval, to implementation. The purpose of the ESMF is to: (1) serve as environmental and social risk management framework; (2) describe the possible environmental and social impacts of subprojects; and (3) outline the procedures for environmental and social assessment and management of the proposed subprojects financed under the IDRMP. The type and location of the sub-projects are not identified at this stage and their impacts cannot be determined until project planning is started by communities. Thus, the ESMF outlines the principles, rules, guidelines and procedures to be followed during the screening of subprojects against any potential environmental and social impacts at the community level. The document guides in designing and preparing appropriate measures and plans to reduce, mitigate and/or offset adverse impacts during preconstruction, construction or implementation and operational phases and enhance the positive outcomes caused as a result of the project interventions.

### 1.1.2 Objectives of the ESMF

The objectives of the ESMF are to:

- Assess the potential E&S risks and impacts of the proposed Project and propose typical or indicative mitigation measures;
- Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of mitigating the potential environmental and social impacts of investments to be financed under the project.
- Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to IDRMP subprojects.
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.
- To outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to project investments;
- Establish the budget required to implement the ESMF.
- Provide practical information resources for implementing the ESMF.

### ***1.1.3 Principles of the ESMF***

The IDRMP Environmental and Social Management Framework will be implemented based on the following, but not limited to, principles:

*Principle one:* Allow broad consultation of the communities in the identification and planning of subproject types in their localities depending on their prioritized challenges;

*Principle two:* Provide support to communities to develop their subproject application to avoid or minimize environmental and social safeguards concerns;

*Principle three:* Provide support to regulatory institutions to review applications and determine if additional, more detailed environmental or social planning is required before applications can be approved;

*Principle four:* Provide support to communities and local authorities in carrying out their respective roles by funding substantial training, information resources and technical assistance; and

*Principle five:* Provide funding for quarterly and annual reviews for assessing compliance, learning lessons, training impacts, and improving future performance, as well as assessing the occurrence of potential cumulative impacts due to project funded and other development activities.

As a separate document, a Resettlement Policy Framework (RPF) is also prepared which provides the overall principles and objectives of ESS5 and the relevant national laws and regulations, and guidance on how to manage land acquisition or potential restriction of access, and the process to be followed in case of voluntary land donation. The main objectives of the RPF include:

1. Establish the IDRMP resettlement and compensation principles and implementation arrangements;
2. Describe the legal and institutional framework underlying Ethiopia's approaches for resettlement, compensation and rehabilitation, and in line with ESS5 of the World Bank;
3. Define the eligibility criteria for the identification of Project Affected Persons (PAPs) and associated entitlements;
4. Describe the consultation procedures and participatory approaches involving PAPs and other key stakeholders;
5. Provide procedures for filing grievances and resolving disputes; and
6. Define a participatory process by which potential reduced access to resources is identified and mitigation measures established; and
7. Describe implementation and monitoring arrangements

In addition to the RPF, a Labor Management Procedures (LMP) and Stakeholders Engagement Plan (SEP) have been prepared.

## **1.2 Approach and Methodology**

The ESMF is undertaken to ensure consistency with a set of core principles for environmental and social management outlined in the relevant national and World Bank Environmental and Social Standards (ESS) requirements in order to effectively manage project risks and promote sustainable development. Thus, the ESMF outlines the principles and procedures to be followed to screen the subprojects against any potential environmental and social impacts at specific site. The methods employed to prepare the ESMF are the following:

### ***1.2.1 Desk Reviews***

- Thorough desk review of relevant government policy, legal and regulatory frameworks, laws and proclamations, environmental and social assessment Guidelines, reports of the ESMFs conducted for other sector ministries/development agencies, and pertinent study documents.
- Stocktaking of existing literature and data available in the data base and archives of the Ministry of Water and Energy (MoWE). Such data mainly pertains to the Aide Memoire, project appraisal document (PAD), document for planned IDRMP Subprojects for the Basins, Basin Development Master Plans, Feasibility Study reports, Environmental and Social Impact Assessment Reports, and Resettlement Action Plans, among others.

### ***1.2.2 Federal level Consultations and In-depth Interviews***

Consultations and in-depth interviews were held with key personnel of the focal governmental body/MoWE responsible for the implementation of IDRMP and the Basin Development Authority (BDA). Similar consultation was also conducted with personnel of the Ethiopian Disaster Risk Management Commission (EDRMC), as the other main implementing agency. The consultations largely focused on the concerns and opinions of stakeholders regarding the overall IDRMP objectives, its main components, and in particular the project subcomponent for which the ESMF was prepared. A discussion of the project components and planned subproject types and associated draft ESMF procedures were made part of the consultation process. Moreover, consultation also dwelled on identifying the strengths, weaknesses, institutional capacity gaps and other constraints to implement the ESMF procedures.

### ***1.2.3 Consultations with Potential Project Beneficiaries***

Community consultation was the other main method of field data collection used in the preparation of this ESMF. For this purpose, a consultation was conducted with a community from Awash Bello *Kebele*, Sebetta Hawas *Woreda*, Finfine Special Zone of Oromia in the Becho Plains of the Upper Awash Valley.<sup>1</sup> The participants of community consultations comprised smallholder farmers,

---

<sup>1</sup> The community consultation was conducted in the Awash basin since security concerns and time constraints did not allow similar engagements at the other basins.

women, youths, and elders, as well as experts at *woreda* administration office.

The participants of previous community consultations were 11 in number (male 9 female 2), and comprised smallholder farmers, women, youths, and elders, as well as experts at *woreda* administration office. However, recently (March 2022) intensive consultations were conducted in oromia and Afar regions. A total of 89 PAPs (75 male and 14 female) took part in the consultation in Bora and Liben Chiqala Woredas of Eastern Oromia. In addition, consultation with Afar communities took place in Amibara Woreda, Kbe Buri and Sidaha Fafi Kebeles with a total of 80 participants (60 male and 20 female). For a detailed information on community and other stakeholder consultations, please refer the SEP prepared for the project.

The purpose was to measure and gauge whether there is broad community support for IDRMP subprojects. The consultation process also focused on ascertaining the potential impacts of proposed subproject activities of IDRMP. It provided space to capture the views and experiences of these groups in regards to their assumptions and expectations of risk factors, concerns, challenges and benefits of the envisaged flood protection subprojects. Community consultation guides were prepared and used for the data collection purpose. The community consultation guides focused on the potential positive and negative impacts of the subprojects stated in Component 2 of the Project. During the consultations, in the area where the community speaks languages other than Amharic, the Consultant used Afaan Oromo translators.

## **2 Description of the Project**

### **2.1 Purpose and Objective of the Project**

The proposed Project aims to support the Government of Ethiopia in its efforts to reduce poverty through quality growth and build longer-term disaster and climate resilience by strengthening the institutional and technical foundation to operationalize and mainstream disaster risk management as well as to plan and implement flood risk reduction and management activities. The activities include leveraging physical investments in flood risk reduction and early warning, strengthening institutional DRM capacities at the federal and regional level, and enhancing financial preparedness and disaster risk financing.

As stated in the Project Appraisal Document (PAD), the Project Development Objective (PDO) is to support the Government of Ethiopia to strengthen its institutional capacity for DRM and to reduce the impact of floods. The proposed Integrated Disaster Risk Management Project (IDRMP) (the Project) is also expected to fill the critical gaps related to overall DRM and flood risk management in particular, which has so far received limited attention despite floods having long been recognized as one of the major disasters in the country affecting the lives and livelihoods of the poor and vulnerable for many years. IDRMP is proposed to be implemented in the Awash River Basin, Rift Valley Lakes Basin and Omo Gibe River Basin.

### **2.2 Project Description**

The IDRMP has four major components, with some of the activities in each component posing varying degree of environmental and social impacts/risks, and for which this ESMF was prepared.

***Component 1: Strengthening Institutional and Coordination Capacity for DRM (estimated amount: US\$ 20 million)***

This component aims to strengthen institutional and coordination capacity among federal level agencies (including various sectors) and between federal and decentralized levels of the Government for improved DRM. The Component intends to strengthen the functions of the new EDRMC as the federal-level coordinator to enable integration of DRM in various sectors and lower-levels of the Government. For this purpose, five areas have been identified and agreed upon with the GoE. These are: (a) strengthening federal and regional DRM coordination; (b) support mainstreaming of DRM in key sectors; (c) Emergency Preparedness and Response (EP&R) investments; (d) strengthening Disaster Risk Financing (DRF); and (e) raising disaster risk awareness.

## ***Component 2: Accelerating Flood Risk Management (estimated amount: US\$ 268 million)***

This component focuses on physical investments to reduce flood risks and technical assistance and capacity development to facilitate integrated flood risk management. The component will also implement strategic studies for future physical investments and provide technical assistance for operationalization and sustainability of physical investments. As a programmatic approach for long term flood resilience, the concept of Integrated Flood Risk Management (IFRM) will be introduced throughout interventions and guide the activities of Component 2. Further, a risk-based approach will be considered across the flood risk management cycle while close coordination and collaboration across sub-components will ensure complementarities, maximize the impacts of the investment and progress towards the project development objective.

### ***Sub-component 2.1: Basin-level flood risk reduction investments***

This sub-component will focus on basin-level physical flood risk reduction investments. A framework approach will be applied to identify and prioritize the sub-projects for physical flood risk reduction investments, both spatially and by range of technical, economic, financial, and socio-economic criteria during implementation. Investments are expected to include channel widening and river training and the construction of embankments, dykes, levees, retention ponds/lakes, and other hydraulic structures. Where possible, multi-use infrastructure will be developed to enhance co-benefits with relevant sectors, for example water storage/harvesting structures to attenuate flood flows and subsequently store water for dry season use (integrated drought and flood risk management).

### ***Sub-component 2.2: Hydromet services and impact-based early warning systems***

This sub-component will support: (a) improvements in the quality of select hydromet services; and (b) the development and operationalization of impact-based flood early warning systems for prioritized locations within the three priority basins. Based on the needs of users and the status of existing systems, this sub-component will address the entire hydromet value chain in the most effective manner. Activities will address monitoring and data management, modeling and forecasting, the generation and dissemination of warnings, the response to warnings, and the creation and tailoring of services. A key component will be to ensure that services are delivered to decision makers and community-level users.

### ***Sub-component 2.3: Community-level flood preparedness and awareness raising***

Participatory and action-oriented capacity building and awareness raising activities on flood preparedness for select high flood risk areas in the three priority river basins will be conducted, building on existing capacity and institutional arrangements at the community level (e.g. *Woreda*

Risk Profiling). This will include activities such as participatory design of physical investments for flood risk reduction, local flood hazard/exposure mapping recognizing risk profile before/after physical investments, institutionalizing flood early warning dissemination at the community level, evacuation planning, training, exercise, and drills, etc. Special attention will be paid to promote the participation of women, socially vulnerable groups, people with disabilities, elderly, etc. in these activities. Taking into account the mandates and existing modus operandi of such community-level DRM activities, the EDRMC will be responsible of overall DRM and contingency planning coordination with *Woreda* administrations and among relevant sectors, while the MoWE and EMI will be responsible of construction and management of flood risk reduction infrastructures and providing relevant technical inputs related to flood forecasting and early warnings, etc. in these activities.

#### ***Sub-component 2.4: Strategic studies for future investments and capacity building for urban flood risk management***

This component deals with future investments but is not part of current IDRMP. The inclusion of the other basins under this and other components should not be considered as out of place.

This sub-component will focus on strategic studies for future investments for flood risk reduction in the Strategic Study Basins and selected urban areas. Also, technical assistance and capacity building for urban flood risk management will be conducted.

For basin-level physical investments in Strategic Study Basins, namely the Abbay, Baro-Akobo, Wabi-Shebele and Genale-Dawa basins, basin-wide study for identification and prioritization of physical investment for flood risk reduction (basin flood risk management plan), then feasibility study for selected physical investment will be conducted, based on the flood risk management investment framework to be formulated during preparation of the project. In addition, detailed design studies may be implemented for Wabi-Shebele and Genale-Dawa basins.

For urban flood risk management, diagnostic of urban flood risk status and management at the country level will be conducted. The diagnostic will likely include: status of urban flood risk in the country; analysis on root causes/drivers of urban flood and their dynamics (e.g., urban expansion, population growth, land use change, status of drainage infrastructure, impacts of fluvial and pluvial flooding, climate change, sedimentation and solid waste issues); assessment of legal, regulatory and institutional framework for urban flood risk management including coordination between Urban Local Governments (ULGs)/cities and other government entities. Then, recommendations on general urban flood risk management interventions in Ethiopia will be provided. Also, study on flood risk of major cities will be conducted to select target cities for city level interventions described below. Engagement of related regions during implementation of the national level diagnostic will be encouraged.

### ***Component 3: Contingent Emergency Response (estimated amount: US\$ 0 million)***

Following an eligible crisis or emergency, the Recipient may request the Bank to re-allocate project funds to support emergency response and reconstruction. This component would draw from the uncommitted credit/grant resources under the project from other project components to cover emergency response. For the Contingent Emergency Response Component (CERC) to be activated, and financing to be provided, the Government will need: (a) to submit a request letter for CERC activation and the evidence required to determine eligibility of the emergency, as defined in the CERC; (b) an Emergency Action Plan, including the emergency expenditures to be financed; and (c) to meet the environmental and social requirements as agreed in the Environmental and Social Commitment Plan and CERC.

### ***Component 4: Project Management and Implementation Support (estimated amount: US\$ 12 million)***

This component will support strengthening the institutional capacities for Project management and implementation support as well as operating costs incurred by implementing agencies on technical, environmental and social, fiduciary, gender, citizen engagement, monitoring and evaluation aspects of Project activities. The component will also finance technical and Project audits, all through the provision of technical advisory services, training, operating costs and acquisition of goods.

## **2.3 Project Beneficiaries**

### ***Direct beneficiaries***

The Project is estimated to benefit at least 638,000 people (out of which 301,000 are female) in the target *woredas*<sup>2</sup> for flood risk reduction investments under Sub-component 2.1 in the priority basins of Awash, Omo, and Rift Valley Lakes basins.<sup>3</sup> The Project will reduce impact of floods in the target areas by reducing casualties, physical damages, economic losses, negative human and welfare impacts, and displacement of vulnerable households, thereby reducing those falling into poverty due to recurrent floods. Depending on the type of sub-project, the Project will also include potential co-benefits through provision of associated water harvesting and dual-purpose road infrastructure together with flood protection infrastructure. By protecting the people, land, property, and assets along the rivers, the Project is expected to promote forward-looking planning, long-term capital investments and entrepreneurship, even if disasters do not occur. In addition, based on World Bank estimates and calculations, the average poverty rate of the *woredas*

---

<sup>2</sup> According to 2020 population projects from the Central Statistics Agency of Ethiopia.

<sup>3</sup> Exact number of population directly benefitting from the Project depends on the combination of sub-projects prioritized and selected as the investment plan for IDRMP through the strategic investment framework. The direct beneficiaries mentioned here are based on the calculation from the combination of candidate sub-projects producing the least number.



potentially benefitting from Sub-component 2.1 is higher than the national average<sup>4</sup>.

Improved flood early warning system through Sub-component 2.2 will benefit around 415,000<sup>5</sup> people who are exposed to floods in the target river basins of Awash, Omo, and Rift Valley Lakes basins. The Sub-component 2.3 on community-level flood preparedness will further strengthen the awareness and capacity of the communities to prepare for and respond to floods.

Institutionally, the Project will benefit government officials and practitioners in multiple ministries and agencies at the federal level as well as in decentralized levels of the government, through the various technical assistance activities to be carried out on DRM and flood risk management. The EDRMC and various federal ministries and agencies, such as MoUI and MoF, etc. and decentralized levels of the government will benefit from technical assistance activities under Component 1 through strengthening and mainstreaming DRM and DRF activities. First responders receiving equipment and training on emergency response will also benefit from the Project under Component 1. The MoWE, Basin Offices in the Awash, Abbay, and Rift Valley Lake basins, MoUI, and relevant regional governments and ULGs will be involved in technical assistance activities related to strategic studies, analytical work, and investment planning for flood risk management under Component 2. Collaboration among MoWE, EMI, and EDRMC will be also strengthened for hydromet and flood early warning system through activities under Component 2.

### ***Indirect beneficiaries***

The Project will also indirectly benefit broader Ethiopian population through its activities. Through improved hydromet services, the Project will also benefit the population/employment engaged in weather-dependent sectors and general population benefiting from those sectors. Ministries and agencies in charge of weather-dependent sectors, such as agriculture, transport, energy, health, fishery, environment, tourism, and emergency services will also benefit from more reliable and accurate hydro-meteorological information. In addition, the Project will indirectly reduce government's fiscal burden due to disaster response and negative macroeconomic impact from recurrent floods. The Project will also benefit the general population of Ethiopia through strengthened DRM system of the country, such as the establishment of National Digital Risk Information Platform, enhanced emergency communication systems, and strengthened emergency preparedness and response capacity.

### ***Institutional and Implementation Arrangements***

The implementing entities of the Project are the MoWE, EDRMC, EMI, and basin offices in Abbay, Awash, and Rift Valley Lakes basins, with the overall responsibility of the project management and coordination under MoWE. A Project Management Unit (PMU) will be

---

<sup>44</sup> The average poverty rate of the *woredas* benefitting from potential sub-projects under the Project is 27.1% compared to 24.0%, based on World Bank estimates of the poverty in 2016.

<sup>5</sup> These beneficiaries may likely be a sub-set of the 638,000 beneficiaries from improved flood risk reduction infrastructure under Sub-component 2.1

established under MoWE specifically for IDRMP for technical level coordination among the implementing entities as well as consolidating activity plans, procurement plans, M&E reports, and progress reporting, etc. for the entire Project, in addition to implementing relevant activities under Component 2. The PMU will also oversee and ensure operational compliance with Project regulations and World Bank policies and procedures, as defined in the Financing Agreement (FA), Project Appraisal Document, and Project Operations Manual, Disbursement and Financial Information Letter (DFIL) and applicable government policies. Other implementing entities are responsible for their respective sub-components and activities with technical, fiduciary, monitoring & evaluation tasks and responsibilities.

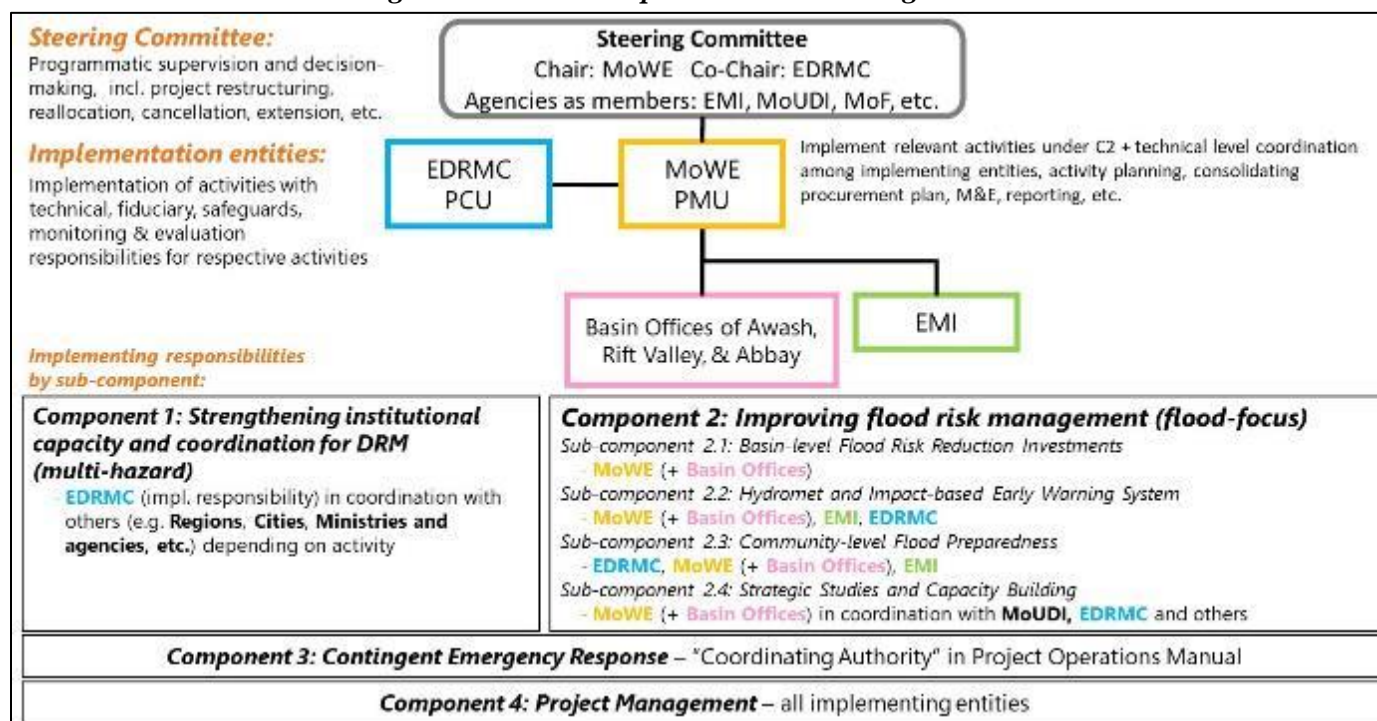
A Steering Committee will be responsible for overall strategic decision-making related to Project implementation and management, such as project restructuring, reallocation among components, cancellation, extension, etc. The Steering Committee will be chaired by the management of the MoWE, which is responsible for implementing a major portion of the Project amount through Component 2, and co-chaired by the EDRMC, which is responsible for leading various ministries and agencies and other stakeholders for overall and high-level DRM initiatives under Component 1. Steering Committee members include the other implementing entity under the Project, i.e. the EMI, as well as key ministries supporting and benefiting from the Project, such as the MoUI, and MoF. The full composition and the ToR will be detailed in the Project Operations Manual (POM).

The EDRMC with the mandate to lead overall DRM coordination and mainstream DRM across sectors will be implementing activities under Component 1, which comprise multi-hazard and multi-sectoral initiatives requiring the leadership of the EDRMC. The EDRMC will set up a Project Coordination Unit (PCU) and have technical, fiduciary, M&E and reporting responsibilities for the Component in coordination with other federal ministries and agencies, relevant regional governments and lower-level administrations, city administrations, etc. depending on the activity. Relevant technical working groups will be set up, as needed, and led by EDRMC for the activities that require coordination with, information and inputs from, or capacity building for entities other than EDRMC. The EDRMC will carry out procurement and contract management functions for goods and consultancies, if needed, on behalf other entities for activities under Component 1. The EDRMC PCU will be reporting to MoWE PMU for consolidation before presenting to the Steering Committee or the World Bank.

Component 2, which comprises various aspects of an integrated flood risk management, will be implemented by multiple entities, including the MoWE, EMI, and EDRMC. Some minor field-level activities will be implemented by the basin offices in Abbay, Awash, and Rift Valley Lakes basins. The MoWE PMU will be responsible for technical, fiduciary, environmental and social, monitoring & evaluation and reporting aspects of the Sub-component 2.1 involving civil works. The Sub-component 2.2 will be coordinated by the MoWE and implemented by the MoWE, EMI, and EDRMC, depending on the type of goods and consultancies to be procured and which entity

will be receiving and managing those items, based on their mandates and existing *modus operandi*. The Sub-component 2.3 will be coordinated by the EDRMC and implemented by the EDRMC, MoWE, Basins Offices, and EMI, in coordination with relevant regional governments and *woreda* administrations. The Sub-component 2.4 will be led by MoWE and implemented by the MoWE and the Basin Offices in the Abbay, Awash, and Rift Valley Lakes basins depending on the type and location of the activity, in coordination with relevant entities, such as MoUI for urban flood risk management.

**Figure 1: IDRMP Implementation Arrangement**



(MoWE: Ministry of Water & Energy, EDRMC: Ethiopian Disaster Risk Management Commission, EMI: Ethiopian Meteorology Institute, MoUDI: Ministry of Urban Development and Infrastructure, MoF: Ministry of Finance, PMU: Project Management Unit, PCU: Project Coordination Unit)

## 2.4 Priority Basin Level Subprojects

In the three basins identified for priority physical intervention under the IDRMP in which flood risk reduction and related civil work will be implemented, the selection of subprojects has already been made. These subprojects are envisaged to have relevance to safeguard issues in the preparation the ESMF. Table 2.1 presents the list of candidate priority subprojects, the types of infrastructure, and their status of preparation in each of the three basins.

**Table 1: Types of subprojects with relevance to safeguards per basin and their status**

Priority Basins	Project	Type of Infrastructure	Design stage	Next Step
Awash: 3 projects (one common with Rift Valley)	Upper Awash River Training and Flood Protection Works	Flood embankment/dyke and River Widening	FS and DD in 2012	Micro-dam* plan and reservoir operations will be discussed.
	Middle and Lower Awash Flood Control and Protection Project (4 Priorities in 7 weredes)	Flood embankment/dyke	FS and DD in 2019	Then, using existing FSs, optimum selection of basin interventions will be studied through FRM Investment Framework.
	Awash, Ziway and Lake Abijita Basin water transfer (Common with Rift Valley Lakes basin)	Micro-dam and Water transfer structures	On-going FS at inception stage (Inception report not yet received)	Further design and civil work for selected interventions will be implemented as part of IDRMP (Excl. large dams).
Rift Valley Lakes Basin: 6 projects (one common with Awash)	Lake Hawassa Flooding and Protection Embankment Assessment and Design.	Flood embankment/dyke	FS in 2010	Basin wide study will be conducted to identify and prioritize physical interventions. Then, (FS,) DD, and civil works for selected interventions would be implemented as part of IDRMP. Interventions of left listed sub-projects may or may not be selected through the study, therefore specific location of interventions will be identified later.
	Under Sego irrigation and Drainage feasibility study. Flood Protection on Sile River and Sego River (Approx. 5% of project total cost)	Flood embankment/dyke	FS in 2010	
	Awash Ziway and Lake Abijita Basin Water transfer (Common with Awash basin)	Micro-dam and Water transfer structures	On-going FS at inception stage (Inception report not available yet)	
	Silte Zone Flood and Drought Prevention	Earth dam and Gabion	TOR and Proposal in 2021	
	Weyto Flood Protection	Dyke embankment/Fill Work	Project Proposal in 2020	
	Halaba Flood Protection and Water Harvesting	Flood protection and Pond	Project Proposal in 2020	
Omo: 1 project	Omo-Gibe Basin flood protection plan	micro-dam maintenance; retaining wall; water pond; etc..	Draft document (translated from Amharic)	Same with the above for Rift Valley Lakes

\*Typically, a height of a micro dam is less than 3 m from its lowest foundation up to its crest. Typically, a micro-dam will hold water up to 2 m height while freeboard is provided above the full storage level.

## **3 Relevant Policy, Legal and Institutional Framework**

### **3.1 Policy framework**

This section discussed national environmental and social Policies, Strategies and Legislation relevant for the implementation of ESMF of the Integrated Disaster Risk Management Project. These include:

The effects of the proposed programme on the environment should be assessed in order to ensure that the programme is in harmony with the natural and socio-economic environment and also ensure sustainability of the resulting development. The following section provides a summary of IFAD's SECAP and the national policies, legislative frameworks, guidelines and standards relevant to the proposed programme.

#### ***3.1.1 The Constitution***

The Constitution of the Federal Democratic Republic of Ethiopia was issued in August 1995 with several provisions, which provides basic and comprehensive principles and guidelines for environmental protection, and management in the country. The relevant articles and environmental provisions of the constitution among others are the following:

##### ***Article 35- Rights of Women***

- The historical legacy of inequality and discrimination suffered by women in Ethiopia taken into account, women, in order to remedy this legacy, are entitled to affirmative measures. The purpose of such measures shall be to provide special attention to women so as to enable them to compete and participate on the basis of equality with men in political, social and economic life as well as in public and private institutions;
- Women have the right to full consultation in the formulation of national development policies, the designing and execution of projects, and particularly in the case of projects affecting the interests of women;
- Women have the right to acquire, administer, control, use and transfer property. In particular, they have equal rights with men with respect to use, transfer, administration and control of land. They shall also enjoy equal treatment in the inheritance of property; and,
- Women shall have a right to equality in employment, promotion, pay, and the transfer of pension entitlements.

##### ***Article 40- The Right to Property***

- The right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested to the State and in the peoples of Ethiopia. Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange.

#### ***Article 43- The Right to Development***

The Peoples of Ethiopia as a whole, and each Nation, Nationality and People in Ethiopia in particular have the right to improved living standards and to sustainable development; and,

- Nationals have the right to participate in national development and, in particular, to be consulted with respect to policies and projects affecting their community.

#### ***Article 44- Environmental Rights***

- All persons have the right to a clean and healthy environment; and,
- All persons who have been displaced or whose livelihoods have been adversely affected as a result of State programs have the right to commensurate monetary or alternative means of compensation, including relocation with adequate State assistance.

#### ***Article 90- Social Objectives***

- To the extent the country's resources permit, policies shall aim to provide all Ethiopians access to public health and education, clean water, housing, food and social security; and,
- Education shall be provided in a manner that is free from any religious influence, political partisanship or cultural prejudices.

#### ***Article 92- Environmental Objectives***

- Government shall endeavor to ensure that all Ethiopians live in a clean and healthy environment;
- The design and implementation of programs and projects of development shall not damage or destroy the environment;
- People have the right to full consultation and to the expression of views in the planning and implementations of environmental policies and projects that affect them directly; and,
- Government and citizens shall have the duty to protect the environment.

#### ***3.1.2 Relevant Environmental Policies***

The following policies are relevant to IDRMP since it will give policy guidance to prevent or mitigate environmental impacts of IDRMP that may arise due to project implementation.

#### ***Environmental Policy of Ethiopia***

The first comprehensive statement of Environmental Policy of Ethiopia (EPE) was approved by the Council of Ministers in April 1997 that was based on the policy and strategic findings and recommendations of the Conservation Strategy of Ethiopia. The policy is aimed at guiding sustainable social and economic development of the country through the conservation and sustainable utilization of the natural, man-made and cultural resources and the environment at large. The overall policy goal is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a

whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.

The specific Policy objectives seek to, among others:

- Ensure that the benefits from the exploitation of non-renewable resources are extended as far into the future as can be managed, and minimize the negative impacts of their exploitation on the use and management of other natural resources and the environment;
- Incorporate the full economic, social and environmental costs and benefits of natural resource development into the planning, implementation and accounting processes by a comprehensive valuation of the environment and the services it provides, and by considering the social and environmental costs and benefits which cannot currently be measured in monetary terms;
- Prevent the pollution of land, air and water in the most cost-effective way so that the cost of effective preventive intervention would not exceed the benefits;
- Conserve, develop, sustainably manage and support Ethiopia's rich and diverse cultural heritage; and,
- Raise public awareness and promote understanding of the essential linkages between environment and development.

### ***National Health Policy***

Ethiopia has a low level of health coverage even in comparison with other Sub-Saharan countries. This is largely related to low levels of income and widespread poverty, low levels of education, nutritional deficiencies, poor environmental conditions, and inadequate access to health services. The Government has therefore assigned a very high priority to significantly improve health care and, in 1998, issued a health policy

The Government of Ethiopia has in 1998 issued the national health policy based on the following main principles:

- Promotion of disease preventive components.
- Ensuring accessibility to health care for the whole population.
- Development of appropriate capacity based on needs assessment.
- Promotion of private sector and NGO participation in the provision of health care.
- Promotion of inter-sect oral activities through a national self-reliance program.
- Democratization and decentralization of the health care system

Health Sector Development Plans and Strategies have been designed to implement the stated health principles within a defined period of time. The strategies include raising the awareness of personal and environmental health care and sanitation through information, education and communication (IEC); control of disease; and promotion of primary health care through community participation.

### ***HIV/AIDS Policy***

The new policy came into force in January 2012 and will be applied across the board in state and private organizations. It is expected to protect job seekers from mandatory HIV tests, while facilitating voluntary counseling and testing and defending the right of employees living with HIV to medical leave or job re-allocation. It also provides guidelines for the establishment of an AIDS fund to help employees cope with living with the virus. The Policy stipulates that employers will make the necessary investments to ensure universal precautions in workplaces to protect employees from HIV infection, and are also expected to put in place a post-exposure prophylaxis system for their workforce.

### ***National Social Protection Policy of Ethiopia***

The main objectives of Social Protection Policy of Ethiopia are the following:

- Protect poor and vulnerable individuals, households and communities from the adverse effects of shocks and destitution;
- Increase the scope of social insurance;
- Increase access to equitable and quality health, education and social welfare services to build human capital thus breaking the intergenerational transmission of poverty;
- Guarantee a minimum level of employment for the long term unemployed and under-employed;
- Enhance the social status and progressively realize the social and economic rights of the excluded and marginalized; and,
- Ensure the different levels of society are taking appropriate responsibility for the implementation of social protection policy.

### ***National Policy on Women***

In 1993, the government introduced the National Policy on Women (NPW) for Ethiopia. Among the major objectives of the NPW are creating conducive environments to ensure equality between men and women so that women can participate in the political, social, and economic decisions of their country, and facilitating the necessary condition for rural women to have access to basic social services. The policy is also intended to create the appropriate structures within the government offices to establish and monitor the implementation of different gender-sensitive and equitable public policies. Following the policy recommendation of creating an appropriate government structure at the various tiers of government, there are now ministries/bureaus/offices of women's affairs. At the federal level, one of the duties and responsibilities of the ministry for women, youth and children affairs is conducting and monitoring women's affairs activities at the national level and creating an environment for the implementation of the NPW in different sectors. At regional, zonal, Worde, and *Kebele* levels, there are respective offices (at *Kebele* level, usually individuals are assigned in lieu of an office). On the other hand, those situated in line sectors/ministries are mandated to identify issues of gender gaps and develop strategies to address inequalities in the respective line ministries and their sub-sectors. The Women's Affairs Offices



are formally accountable to their respective councils, many of which have women's affairs or social affairs committee that are engaged in oversight activities. The plans included steps to enhance rural women's access to and control over productive resources like land.

### **National policy on GBV/ SEA /SH**

There is no stand alone policy on GBV/ SEA /SH. However, Gender based violence issues are addressed in various policies and legislations here and there. As aforementioned, there is no single, consolidated law on GBV or VAWG, but there are various provisions related to specific forms of GBV, general violence protections for women, and sweeping declarations of equality that can be interpreted as protecting women against GBV. For example, Ethiopia has ratified international agreements that protect the rights of women and girls, such as the Convention on the Elimination of Discrimination against Women (CEDAW) and the Protocol to the African Charter on the Rights of Women in Africa. Ethiopia also has set legal and policy provisions that promote the rights of women and girls under the Federal Constitution. Some of the specific legal measures that have been established in Ethiopia at the federal level to address acts of violence include the 2000 Revised Family Code and the 2005 Revised Criminal Code. Additionally, the Ethiopian government has established institutions, federally and regionally, such as The Ministry of Women, and Social Affairs (MOWSA) and its respective offices, special police units aimed at protecting children and women, and a Special Bench within the federal criminal court specifically for cases that relate to violence against women

### ***Population Policy***

In comprehensive efforts to rehabilitate the shattered social and economic structure and to lay down a strong foundation for sustainable development, the Transitional Government of Ethiopia (TGE) has officially adopted a National Population Policy on July 12, 1993. The major goals of the newly adopted National Population Policy (NPP) include the harmonization of the rate of population growth with the capacity of the country for development, and the rational utilization of resources, thereby creating conditions conducive to the improvement of the welfare of the population. Thus, the NPP will be pursuing the following objectives: 1) closing the gap between high population growth and low economic productivity through planned reduction of population growth and increasing economic returns; 2) expediting economic and social development processes through holistic, integrated development programs designed to expedite the structural differentiation of the economy and employment; 3) reducing the rate of rural to urban migration; 4) maintaining/improving the carrying capacity of the environment by taking appropriate environmental protection/conservation measures; 5) raising the economic and social status of women by freeing them from the restrictions and drudgeries of traditional life and making it possible for them to participate productively in the larger community; 6) significantly improving the social and economic status of vulnerable groups (women, youth, children, and the elderly). The task of harmonizing the rate of population growth with the tempo of economic and social

development requires the involvement and collaboration of a number of governmental and nongovernmental agencies. The UNFPA Governing Council had approved the allocation of 95 million Ethiopian Birr to Ethiopia. This assistance may be increased in the next few years if the financial situation permits.

### **National Policy on Disaster Prevention and Management (NPDPM)**

A National Policy on Disaster Prevention and Management (NPDPM), and its detailed Directives have been in place since 1993. The NPDPM defines its objectives and basic principles. It describes the link between preparedness and prevention; sectoral integration; how the early warning information could trigger declaration of disaster; the development of a relief plan; the role of Emergency Food Security Reserve; the role of National Disaster Prevention and Preparedness Fund; and other preparedness and logistic procedures. It also indicates how the disaster management institutions should be structured at different levels and what the duties and responsibilities of each structure would be. Details of the policy implementation procedures, the different management structures and the duties and responsibilities of all stakeholders are also given in the Policy Directives document.

### ***Labor Policy***

The Constitution of Ethiopia contains a full chapter (Chapter 3) on fundamental rights and freedoms. The funental rights have been grouped under the headings, “Human Rights” and “Democratic Rights”. The Constitution guarantees rights and freedoms, inter alia equality before the law, equal protection under the law, freedom of speech and expression, freedom of religion, belief and opinion, freedom of assembly and association, freedom of person, freedom against jeopardy and ex post facto laws, the right to property.

Among these fundamental rights, a whole range of general principles of Labor rights are firmly anchored in the constitution. The constitution provides for principles such as the right of the security of the person (Article 16 of the Constitution), the prohibition against inhuman treatment and the abolishment of slavery and servitude (Article 18 (2)) and forced and compulsory Labor (Article 18 (3) and (4) of the Constitution). General Freedom of Association is laid down in the Constitution (Article 31, “for any cause or purpose”), and specified in Article 42, “Rights of Labor”, which reads: “Factory and service sector employees, peasants, agricultural workers, other rural workers, government employees below a certain level of responsibility and the nature of whose employment so requires, shall have the right to form associations for the purpose of improving their economic and employment conditions. This right shall include the right to form trade union and other associations and to negotiate with their employers and other organizations affecting their interests”. The Right to Strike is explicitly mentioned in Article 42 (1) b) of the Constitution. This article, in its paragraph 2, also lays down the right to reasonable limitation of working hours, to rest, to paid leave and to healthy and safe working environment.

Article 35 of the Constitution deals with the rights of women, such as equality with men (Article

35(1)), in particular in employment, promotion, pay and the transfer of pension entitlements (Article 35(7), and 42 (1) d)). The Constitution grants the right to maternity leave with full pay, as well as prenatal leave with full pay, in accordance with the provisions of the law (Article 35(4) a) and b)).

Pursuant to Article 36 on the rights of children, “every child has the right not to be subject to exploitative practices, neither to be required not permitted to perform work which may be hazardous or harmful to his or her education, health or well-being”.

### ***Pastoral Policy***

The 1995 constitution is the first in incorporated the issues of pastoralists for the first time in the country. It also formed a department in the ministry of federal affairs which coordinates and facilitates development in pastoral areas and set up Pastoralist Affairs Standing Committee in the parliament which oversees pastoral development activities in the country. Regional offices in charge of pastoral development have been established in regions where pastoralism is an important production system. Different from the previous two regimes the current government has attempted to incorporate pastoral development in its national development plans (2000-2004 and 2005-2009 five year plans). Despite lack of clarity as to what will be the future of pastoralism, the government set a national policy and strategies to direct development efforts in the pastoral areas of Ethiopia. It has made a stride in considering the need to develop the pastoral area and to give some development direction that triggers improvement of the livelihood of pastoralists. It also has made certain shift in the thinking of pastoral development from its predecessors (Desta, 2002). It looks like it has made a departure from its predecessors in a sense that it is focusing more on the poor livestock holders (i.e., pastoralists) and poverty reduction than the livestock themselves. However there is still a need to do more to bring pastoralists themselves to participate in the policy making processes that affect their livelihoods. The 1995 Ethiopian Constitution provided for pastoralists the right to free land grazing and not to be displaced from their own lands without their wish. The constitution also provides pastoralists to receive fair prices for their products that would lead to improvement in their conditions of life. These are some of the articles in the constitution which specifically reflect the position of the government regarding pastoralist interest. In its short-medium development policy the government admits the importance of investing in pastoralist to improve the food security situation of pastoralists. It also acknowledges the usefulness of the traditional pastoral knowledge to manage pastoral resources. However in its long term policy it advocates for settlement of pastoralists based on development of irrigation. There is a need for more and open dialogue among the policy makers, development facilitators, researchers, pastoral advocacy groups and the pastoral community to bring to the surface implications and appropriateness of the government long term policy of pastoral settlement.

### ***Ethiopian Water Resources Management Policy***

The overall goal of the Ethiopian Water Sector Policy is to enhance and promote all national efforts

towards the efficient, equitable and optimum utilization of the available water resources of Ethiopia for significant socio-economic development on sustainable basis. The objectives of Water Resources Policy are the following:

- Development of the water resources of the country for economic and social benefits of the people, on equitable and sustainable basis;
- Allocation and apportionment of water based on comprehensive and integrated plans and optimum allocation principles that incorporate efficiency of use, equity of access, and sustainability of the resource;
- Managing and combating drought as well as other associated slow on-set disasters through, inter-alia, efficient allocation, redistribution, transfer, storage and efficient use of water resources;
- Combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures; and,
- Conserving, protecting and enhancing water resources and the overall aquatic environment on sustainable basis.

### ***Land Tenure Policy***

The Constitution of the Federal Democratic Republic of Ethiopia (FDRE) states that the right to ownership of rural and urban land, as well as all natural resources, is exclusively vested in the State and People of Ethiopia. Article 40 of the Constitution indicates that land is a common property of the Nations, Nationalities and the People of Ethiopia, and shall not be subjected to sale or to other means of transfer.

The Land Tenure Policy of Ethiopia strongly supports the principle that project plans must include attractive and sustainable resettlement strategies to the people who are going to be displaced as a result of the development plan, and they have to be fully convinced, compensated and have been able to participate in all phases of the project implementation.

### ***National Biodiversity Policy***

The National Biodiversity Policy (NBP) was established in 1998 based on a holistic ecosystem approach to conserve, develop and utilize the country's biodiversity resources. One of the objectives of the biodiversity policy is to integrate biodiversity conservation and development into Federal and Regional agricultural, health, industrial and overall national economic development strategies and plans.

### ***Wildlife Policy***

The main policy that addresses wildlife conservation is the Wildlife Policy and Strategy of 2005 (WPS). This policy emphasizes development-oriented conservation. The main objective of the WPS is to create a conducive environment whereby the country's wildlife and their habitats are

protected and developed in a sustainable manner, and to enable the sector to play an important role in the economic development of the country.

The WPS aims to protect wildlife through proper administration of wildlife protected areas, conservation of endemic and threatened species, and prevention of disasters and promotion of wildlife health services. The WPS also seeks to establish proper systems to control trafficking in wildlife and wildlife products. Some of the strategies to stop trafficking include establishing check points at entry and exit points and regulation of national and international trade in wildlife and wildlife products in accordance with national and international conventions.

The WPS also seeks to promote sustainable wildlife utilization. The Policy states that the wildlife resources of the country will be properly utilized for sustainable tourism, hunting, trade, ranching and food. Eco-tourism will also be promoted in protected areas and international conventions regarding wildlife and wildlife trade will be implemented. The income secured from wildlife resources will be used to benefit local people and will be reinvested in wildlife conservation endeavors. The income from wildlife will also be used to enhance the overall growth of the national economy.

The WPS further anticipates expanding the wildlife sector by encouraging investors to participate in the conservation of wildlife. It hopes to strengthen research in wildlife in order to protect and develop wildlife and their habitats. Efforts will be made to develop and implement indigenous wildlife conservation experiences and knowledge in a bid to expand the wildlife sector.

The WPS is to be implemented both at the Federal and Regional levels. The Policy provides that Regional states can prepare their own wildlife policies and strategies using the WPS as the basis. Further, the relevant line ministry will put in place the necessary infrastructure to ensure implementation of the wildlife conservation policy and strategy and it will formulate programs.

### **3.1.3 National Environmental Proclamations and Regulations**

#### ***Environmental Impact Assessment Proclamation, Proclamation No 299/2002***

This proclamation establishes the requirement of an EIA procedure for all projects, and clearly describes the procedures to be followed by project proponents with respect to EIAs. The EIA process described in the proclamation underscores the presence of consultation requirements where reports are to be made public, and the comments of the public (especially of the project affected people) are to be solicited and taken into consideration in the review process undertaken by the federal or regional environmental agency in charge of the project. On top of this, the proclamation makes EIA mandatory for specified categories of activities undertaken either by the public or private sectors, or possibly, for the extension of EIA to policies, plans and programs in

addition to projects. The proponent of the project (whether it is public or private body) must prepare an EIA following the requirements specified in the legislation (article 8) and associated guidelines. The MoEFCC (now Environmental Protection Agency (EPA) or the sector Ministries delegated by it and relevant Regional Environmental Agencies will then review the EIA and either approve the project (with or without conditions) or reject it.

The Proclamation on Environmental impact assessment requires, among other things:

- Specified categories of projects to be subjected to an EIA and receive an authorization from the EFCCC or the relevant regional environmental agency prior to commencing implementation of the project.
- Licensing agencies to ensure that the requisite authorization has been duly received prior to issuing an investment permit, a trade or operating license or a work permit to a business organization.
- EFCCC or the relevant regional environmental agencies may issue an exemption from carrying out an EIA in projects supposed to have an insignificant environmental impact.
- A licensing agency may suspend or cancel a license that has already been issued where the EFCCC or the relevant regional environmental agency suspends or cancels environmental authorization.

Procedures that need to be followed in the process of conducting an EIA are described in the Proclamation and further elaborated in the draft EIA procedural guideline issued in 2003 E.C. Thus, a project developer is expected to act as follows:

- Undertake a timely EIA, identifying the likely adverse impacts, and incorporating the means of their prevention.
- Submit an environmental impact study report to the EFCCC, delegated MoWE or the relevant regional environmental agency for review and approval.
- To put this Proclamation into effect the EFCCC has issued an EIA Directive (Directive no.1/2008) and other draft procedural guideline documents, which provide details of the EIA process and its requirements.

Based on the Federal EIA Proclamation No 299/2002, many of the regional states have prepared and put in force their own EIA proclamations and regulations. Some of these regional EIA regulations put stricter rules on the project proponents and EIA practitioners to facilitate for the preparation of EIA's with dependable and sufficient information that would enable sound decision making. In this regard, Oromiya National Regional State issued Environmental Impact Assessment Proclamation No.176/2012.

### ***Environmental Pollution Control, Proclamation No 300/2002***

The Environmental Pollution Control Proclamation No 300/2002 primarily aims to ensure the right of citizens to a healthy environment and to impose obligations to protect the environment of the

country from pollution. The proclamation is based on the principle that each citizen has the right to have a right for healthy environment on one hand and the obligation to protect the environment of the country on the other. The law addresses the management of hazardous waste, municipal waste, the establishment of environmental quality standards for air, water and soil; and monitoring of pollution. The proclamation also addresses noise and vibration as sources of environmental pollution and it seeks for standards and limits for it, providing for the maximum allowable noise level taking into account the settlement patterns. In general, the Proclamation provides a basis from which the relevant environmental standards applicable to Ethiopia can be developed, while sanctioning violation of these standards as criminally punishable offences.

Furthermore, it empowers the EFCCC and/or the Regional Environmental Authority to assign environmental inspectors with the duties and responsibilities of controlling environmental pollution. In order to ensure implementation of environmental standards and related requirements, inspectors belonging to the EFCCC or the relevant regional environmental agency are empowered by the Proclamation to enter, without prior notice or court order, any land or premises at any time, at their discretion. Such wide powers, emanating from the proclamation, are given to environmental inspectors with a clear intention to protect the environment from pollution, to safeguard and ensure wellbeing of human health as well as to maintain the biota and the aesthetic value of nature.

#### **Development, Conservation and Utilization of Wildlife (Proc. No. 541/2007)**

The proclamation aims to enhance the contribution of the wildlife sector towards poverty reduction strategy by maximizing the economic and social benefit to be derived from the wildlife resource. It plans (i) to conserve, manage, develop and properly utilize the wildlife resources of Ethiopia, (ii) to create conditions necessary for discharging government obligations assumed under treaties regarding the conservation, development, and utilization of wildlife, and (iii) to promote wildlife-based tourism and to encourage private investment. Wildlife conservation areas are defined by the proclamation as areas designated for the conservation of wildlife and includes national wildlife conservation parks, wildlife sanctuaries, wildlife reserves and wildlife-controlled hunting areas. National Park means an area designated to conserve wildlife and associated natural resources to preserve the scenic and scientific value of the area which may include lakes and other aquatic areas. Wildlife Sanctuary means an area designated to conserve one or more species of wildlife that require high conservation priority. Wildlife Reserve means an area designated to conserve wildlife where indigenous local communities are allowed to live together with and conserve the wildlife. Wildlife Controlled Hunting Area means an area designated to conserve wildlife and to carry out legal and controlled hunting. The proclamation specifies wildlife conservation areas to be designated and administered by the federal government, by the regions, by private investors, and by the local communities.

#### ***Public Health Proclamation No 200/2000***

Various aspects of public health issues including water quality control, waste handling and disposal, availability of toilet facilities and others are clearly addressed in the public health proclamation. This proclamation critically prohibits discharging untreated liquid waste generated from septic tanks, seepage pits, and industries into water bodies, or water convergences.

### ***Solid Waste Management Proclamation (Proc. No. 513/2007)***

Proclamation no. 513/2007 aims to promote community participation in order to prevent adverse effects and enhance benefits resulting from solid waste. It provides for preparation of solid waste management action plans by urban local governments.

Therefore, Solid Waste Management Proclamation No. 513/2007 states (Article 5.1) that Urban Administrations shall ensure the participation of the lowest administrative levels and their respective local communities in designing and implementing their respective solid waste management plans. In Article 5.1 each Region or urban administration shall set its own schedule and, based on that, prepare its solid waste management plan and report of implementation.

Measures related to waste handling and disposal:

- Any person shall collect waste in an especially designated place and in a manner, which does not affect the health of the society.
- No person shall dispose solid, liquid or any other waste in a manner which contaminate the environment or affects the health of the society.

The proclamation also defines the condition and requirements in its part three and four it defines different solid waste categories and transportation and handling requirement for each category.

### ***Hazardous Waste Management and Disposal Control Proclamation no.1090/2018***

This is one of the recently introduced environmental legislations that specifically deal with hazardous wastes, the proclamation in its preamble elucidated hazardous waste as one of the most crucial environmental problems in Ethiopia. It stated the importance of prevention and control of these type wastes and emphasized the need for creation of a system to control the generation, storage treatment, recycling and reuse as well as transportation and disposal of hazardous wastes to prevent harm to human and animal health as well as the environmental.

The proclamation defined "hazard" as the inherent characteristics of a substance, agent, or situation having the potential to cause adverse effects or damage to human or animal health, the environment, biodiversity and property and has determined the categories and characteristics of hazardous waste in annex I and annex II respectively. The objectives of this proclamation are stated as;

- create a system for the environmentally sound management and disposal of hazardous Waste



- Prevent the damage to the human or animal health, the environment, biodiversity and property due to the mismanagement of hazardous waste.

Further its scope of application is also stated as:

- waste that belongs to any category contained in Annex One of this Proclamation, and waste possesses any of the characteristic contained in Annex Two; as well as on those wastes that might be categorized as hazardous waste by the directive to be issued by the Ministry; person who generates, reuses, recycles, stores, transports, or disposes hazardous waste at large in nation. The proclamation within its 24 articles has dealt with all character and management of hazardous wastes.

***Forest Development, Conservation and Utilization Proclamation No. 1065/2018.***

This Proclamation makes provision with respect to the development, conservation and sustainable utilization of forest resources in Ethiopia. It concerns both private and public forests. It defines the powers and duties of in respect of forestry management and conservation of the Ministry or Minister of Environment, Forest and Climate Change, any regional governmental executive organ that is responsible to implement forest development, conservation and utilization.

There shall be the following types of forest ownership: (1) Private Forest or; (2) Community Forest or (3) Association Forest or (4) State Forest. Obligations and rights of Private Forest Developers, Community Forest Developers and Associations of Forest Developers are defined. "Association forest" means a forest developed, conserved, utilized and administered by associations established to develop a forest. The private developer and community developer shall, among other things, observe the laws issued in respect of environmental safety, watershed and bio-diversity conservation, development and utilization, shall use the acquired forest land only for the intended purpose, and shall respect the important local culture, custom and knowledge. Community Forest Developers shall have priority, as appropriate, in benefitting from the forest's concession given by the government.

They shall share any benefits generated from the forest development as per the community by-laws. Associations of forest developers will have the same rights and incentives as private forest developers.

State forests shall be classified as follows: (1) productive forest (2) protected forest or (3) preserved forest. The Proclamation defines the responsibilities with respect each of these types of forests. Preserved forest shall be protected from any human and domestic animals' intervention except for the purpose of research, education, and disaster prevention. The Ministry shall, among other things, ensure the implementation of this Proclamation in collaboration with the responsible regional sector develop a system in order to determine benefit sharing right of forest products, develop an early warning, prevention and control mechanism to prevent the occurrence of damage

to forest resources and, upon the occurrence of damage, to take emergency measures by coordinating regional and other relevant bodies, and enhance watershed-based forest development. Notwithstanding the power of each regional state to administer its forest resource in accordance with this Proclamation, the Federal Government may take over and administer, in cases where: a) The forest could not be properly developed and conserved jointly by neighboring regional states; b) It becomes necessary to administer the forest or forest land by the federal government because of its national, regional and international significance. The management of the forest shall be in a manner to generate revenues from eco-tourism, carbon trade and other related eco-system services.

Executive organs of the Regional States shall administer any forest land and state forest found in the regional state; supervise and support the development, conservation and administration of private and community forests in line with this Proclamation. They shall also, among other things, regularly monitor and evaluate whether forest developers given land on which to develop forests have used the land for the intended purpose and whether the use of the land is in accordance with the agreed forest management plan and "provide ownership for forest development based on watershed through community participation". The Government shall be instrumental in the conservation of forest resources and expansion of the trade in forest products and markets. The government may demarcate a forest or forest land for the purpose of carbon trade. The Government shall formulate forest development, conservation and utilization plans to allow the participation of the local community in the development and conservation and also in the sharing of benefits from the development of state forests. The government shall also ensure the enhancement of urban forests. The Government, in order to introduce agro-forestry practices among the farming, semi-pastoral and pastoral communities, shall provide them with sufficient amount of plant seeds and seedlings of tree species that could have different economic benefits

### ***Expropriation of Landholdings for Public Purposes Proclamation No. 1161/2019***

The Expropriation of Landholdings for Public Purposes Proclamation No. 1161/2019 has repealed proclamation No. 455/2005 and is applicable throughout the country in rural and urban centers on matters relating to land expropriation, payment of compensation and resettlement of landholders whose land is expropriated for public purpose. The Proclamation defines public purpose as a decision that is made by the cabinet of a regional state, Addis Ababa, Dire Dawa or the appropriate federal authority on the basis of approved land use plan or; development plan or; structural plan under the belief that the land use will directly or indirectly bring better economic and social development to the public.

The Proclamation provides for the following principles of expropriation of land, which guide the decisions of and procedures for expropriating of land for public purpose.

- Federal, regional, Addis Ababa or Dire Dawa cabinet have the power to decide on expropriation. These organs may delegate Woreda or city Administrations to decide on expropriation for public purpose. Woreda and City Administrations will implement the

decision to expropriate landholdings by clearing and taking over of the land in accordance with the procedures laid down in the Proclamation.

- The Proclamation provides for responsibilities of landholder with respect to handing over of the land that is subject to expropriation order. The land requesting body, on the other hand, is required to submit to the city or Woreda administration decision (of expropriation) that shows the size and the exact location of the land to be expropriated at least one year before the commencement of the project and pay the money required for compensation and resettlement (as applicable) to the City or Woreda administration. Handover of land takes over only after payments are made to the landholders.
- Landholders whose landholdings are expropriated are entitled for property compensation and displacement compensation. Property compensation is a compensation paid for the property on the land and permanent improvement made on the land. In case of rural landholdings, displacement compensation constitutes substitute land where available and compensation for income.

Regarding resettlement: Regional States, Addis Ababa and Dire Dawa Administrations are required to establish fund for compensation payment and rehabilitation. Notably, the Proclamation provides that if the land expropriation for public purpose; if for investment, the people who are displaced may own shares. In case the displaced people who have lost their income as a consequence of the land expropriation do not own shares in the investment, economic incentives shall be devised by the beneficiaries, the investor and the administration. The details of these are expected to be determined by a regulation.

Ministry of Construction and Urban Development is entrusted with following up the implementation of the Proclamation pertaining to urban areas at federal level. Ministry of Agriculture is entrusted with following up the implementation of the Proclamation pertaining to rural areas at federal level. Regional States and City Administrations have powers and functions pertaining to the implementation of the Proclamation, Regulation and Directive within their jurisdiction. The Proclamation also stipulates that any person, institution or head of an institution will be liable under applicable laws if they fail to implement the provisions of the Proclamation.

#### ***Regulation No 472/2020 - Expropriation and Valuation, Compensation and Resettlement***

The FDRE Council of Ministers has issued Regulation No. 472/2020 on Expropriation and Valuation and Compensation and Resettlement. The council of minister issued this regulation based on power and duties of FDRE Executive organs Pro. No 1097/2017 Art.5 and Expropriation of land holdings for public purpose and payment of compensation Proclamation 1161/2019 art 26(1). This regulation repealed Council of Ministers Regulation on Payment of Compensation for Property Situated on Landholdings Expropriated for Public Purposes (Regulation No. 135/2007) The regulation provides the basis for compensation of affected properties and to assist the displaced or affected persons to restore their livelihood.

The regulation set detailed procedures on the manners of expropriation and valuation, compensation and resettlement. This Regulation contains property valuation and compensation methods and formulae that should be used in calculating compensation for various properties. It also contains lump sum compensation to be paid for severed social relationship and moral damages.

### ***The Labor Proclamation 1156/2019***

The former Labor Proclamation No.377/2003 is repealed and substituted by a new Proclamation 1156/2019. The new labor legislation consists of much of the provisions of the previous labor law with some improvements and additions made to it. The new legislation has made important improvements on protecting child labor by increasing the minimum age for young workers to be 15 years old (versus the previous 14 years) and have introduced a new sub-article (14h) prohibiting Sexual Harassment or Sexual Assault at workplace to prevent GBV.

The proclamation is also the prevailing law protecting public and workers safety. The proclamation covers health and safety at work, harmonious industrial relation and minimum workplace standard and addresses workplace vulnerability. Article 92-93 of the proclamation defines obligation of employers and employees in workplace including assignment of safety officers and committee. The Labor Proclamation provides a responsibility to employers to protect occupational safety, health and create better working environment for their workers. Article 92 states that “An employer shall take the necessary measure to safeguard adequately the health and safety of the workers...” The proclamations have details about the safety and health of workers. For instance, it forces employers to

- i) Take appropriate steps to ensure that workers are properly instructed and notified concerning the hazards of their respective occupations and the precautions necessary to avoid accident and injury to health;
- ii) ensure that directives are given and also assign safety officer; establish an occupational, safety and health committee of which the committee's establishment, shall be determined by a directive issued by the Minister;
- iii) Provide workers with protective equipment, clothing and other materials and instruct them of its use etc.

This new Labor Law protects Children against Child Labor abuse. Article 89 prohibited employment of less than 15 years. This proclamation states “It is prohibited to employ persons less than 15 years of age”. It is also prohibited to employ young workers which on account of its nature or due to the condition in which it is carried out, endangers the life or health of the young workers performing it. "Young worker" means a person who has attained the age of 15 but is not over the age of 18 years (Article 89 Sub-Article 1).

### ***Provisions related to Gender Based Violence (GBV)***

Gender Based Violence is among the major challenges to human dignity and is a violation of women's rights as human beings. This necessitated the international community to come up with legal instruments to address the problem that are coherent with the Universal Declaration of Human Rights. The major legal instruments and strategies which recognized and addressed GBV are Convention on Elimination of All Forms of Discrimination against Women (CEDAW), Declaration on the Elimination of Violence against Women (DEVAW), Beijing Declaration and Platform for Action, and the SDGs Goal 5.

In line with the international legal instruments, the Ethiopian Constitution, which is the supreme law of the land, devotes over a quarter of its provisions to human rights in which women and children's rights are guaranteed. The Criminal Code of Ethiopia also hosts a number of provisions, which criminalize GBV and its different forms. Article 561 to 570 criminalizes harmful traditional practices, including domestic violence (564), and female circumcision (565, 566). On the other hand, the Ethiopian Criminal Codes do not adequately address SH. Until now, victims have no legal recourse to redress either the short or long-term consequences of the acts perpetrated against them which leave sexual harassment, go unreported. Positively, Proclamation No. 1064/2017 (2017) on federal civil servants and the new labor proclamation no. 1161/2019 provides for the prohibition of sexual harassment.

### ***Federal Civil Servant Proclamation***

Article 88(4) of Labor Proclamation No. 1156/2019 which read as "Where a pregnant worker does not deliver within the 30 working days of her pre-natal leave, she is entitled to an additional leave until her confinement in accordance with Sub-Article (2) of this Article. However, if birth takes place before the expiry of the pre-natal leave, the 90 working days of postnatal leave shall commence." is hereby corrected and shall be read as "Where a pregnant worker does not deliver within the 30 consecutive days of her pre-natal leave, she is entitled to an additional leave until her confinement in accordance with Sub-Article (2) of this Article. However, if birth takes place before the expiry of the pre-natal leave, the 90 consecutive days of postnatal leave shall commence."

### ***Proclamation on Cultural Heritage***

Cultural or archaeological heritage may be damaged or lost during excavations and ensuing public work activities. In addition, chance finds of cultural heritage during excavations would be at risk of loss, unless due measures are taken to protect and save this heritage. According to Article 41 of Proclamation No. 209/2000 on research and conservation of cultural heritage the measures that should be taken during chance finding of heritages (i.e. Fortuitous Discovery of Cultural Heritage) are the following:

- Any person who discovers any Cultural Heritage in the course of an excavation

connected to mining explorations, building works, road construction or other similar activities or in the course of any other fortuitous event, shall forthwith report same to the Authority, and shall protect and keep same intact, until the Authority takes delivery thereof.

- 'The Authority' shall, upon receipt of a report submitted pursuant to Sub-Article (I) hereof, take all appropriate measures to examine, take delivery of, and register the Cultural Heritage so discovered.
- Where the Authority fails to take appropriate measures within six month in accordance with Sub- Article (2) of this Article, the 'person who has discovered the Cultural Heritage may be released from his responsibility by submitting, a written, notification with a full description of the situation to the Regional government official. .
- The Authority, shall ensure that the appropriate reward is granted to the person who has handed over a Cultural Heritage discovered fortuitously in accordance with sub-Articles (I) and (2) of this Article. And such person shall be entitled to reimbursement of expenses, if any, incurred in the course of discharging his duties under this Article.

### ***3.1.3 Environmental Management Guidelines***

The EFCCC has issued some guidelines and standards which are endorsed by the National Environmental Council. The purpose of these guidelines and directives is to ensure that development projects integrate environmental considerations in the planning process as a precondition for their approval. These include Directive No.1/2008, which was issued to determine projects subject to an EIA. According to this directive, the EIA Proclamation is to be applied to the types of projects listed under the directive. The types of projects subject to EIA in the urban sector include roads, solid waste facilities, WSS projects and any other project planned to be implemented in or near areas designated as protected. In a similar manner it is indicated that the National Environmental Council has endorsed certain effluent standards for specified industrial sectors. The endorsed effluent standards for the specified 12 industrial sectors are posted on the official website of the EFCCC, but are not officially published in the same way as directive no.1/2008. As a result, these are widely considered as draft effluent standards for Ethiopia.

The following three draft environmental guidelines are prepared by EFCCC and being used with intention of protecting the general environment along with implementation of any developmental activities.

### **Environmental Guidelines and Standards**

The EFCCC has issued some guidelines and standards which are endorsed by the National Environmental Council. The purpose of these guidelines and directives is to ensure that development projects integrate environmental considerations in the planning process as a precondition for their approval. These include Directive No.1/2008, which was issued to determine projects subject to an EIA. According to this directive, the EIA Proclamation is to be

applied to the types of projects listed under the directive. The types of projects subject to EIA in the urban sector include roads, solid waste facilities, WSS projects and any other project planned to be implemented in or near areas designated as protected. In a similar manner it is indicated that the National Environmental Council has endorsed certain effluent standards for specified industrial sectors. The endorsed effluent standards for the specified 12 industrial sectors are posted on the official website of the EFCCC but are not officially published in the same way as directive no.1/2008. As a result, these are widely considered as draft effluent standards for Ethiopia.

The following three draft environmental guidelines are prepared by EFCCC and being used with intention of protecting the general environment along with implementation of any developmental activities (see Table 2):

***Table 2: Environmental Guidelines prepared by EFCCC***

i) EIA Procedural Guideline (draft), November 2003	<p>Outlines the screening, review and approval process for development projects in Ethiopia and defines the criteria for undertaking an EIA. According to this EIA procedural guideline, projects are categorized into three schedules:</p> <p><i>Schedule 1:-</i> This category includes projects that may have adverse and significant environmental impacts thus requiring a full EIA study.</p> <p><i>Schedule 2:-</i> Projects whose type, scale or other relevant characteristics have potential to cause some significant environmental impacts but are not likely to warrant a full EIA study fall under this group.</p> <p><i>Schedule 3:-</i> Projects which would have no impact and do not require an EIA.</p> <p>However, projects situated in an environmentally sensitive areas such as land prone to erosion; desertification; areas of historic or archaeological interest; important landscape; religiously important area, etc. will fall under <i>Schedule 1</i> irrespective of the nature of the project.</p>
ii) Guideline for Environmental and Social Management Plan (draft), May 2004	<p>Outlines the fundamental contents that need to be featured while preparing an ESMP for proposed development projects in Ethiopia and provides template forms to be used for such purposes. The guideline also provides guidance on the preparation of institutional arrangements for implementation of ESMPs.</p>
iii) EIA Guideline, May 2000	<p>The EIA guideline document provides essential information covering the following elements:</p>

	<ul style="list-style-type: none"> <li>• Environmental Assessment and Management in Ethiopia,</li> <li>• Environmental Impact Assessment Process,</li> <li>• Standards and Guidelines,</li> </ul> <p>Issues for sector EIA in Ethiopia covering agriculture, industry, transport, mining, dams and reservoirs, tanneries, textiles, hydropower generation, irrigation projects and resettlement.</p>
--	--

### 3.2 Institutional Roles and Responsibilities for Environmental and Social Impact Assessment and Management

The institutional arrangement for the ESMF implementation will be streamlined into the current government structure at federal and regional levels. The following institutions will be involved in the implementation of the ESMF of the Integrated Disaster Risk Management Project (IDRMP) in one way or another.

#### 3.2.1 Institutions at the Ministry Level

##### *Ministry of Water and Energy (MoWE)*

The Ministry of Water Irrigation and Energy (now Ministry of Water and Energy) will have the overall responsibility of implementing the Integrated Disaster Risk Management project. The Ministry through the Project Management Unit (PMU) established under it will have the responsibility of implementing ESMF by providing technical support and monitoring proper implementation of the proposed mitigation measures indicated in the ESMF.

The Ministry of Water Irrigation and Energy has been recently restructured and named as Ministry of Water and Energy but duties and responsibilities of this newly reorganized Ministry is not yet finalized to be included in this document. Following the restructuring of the **Ministry of Water Irrigation and Energy**, Basin Development Authority has now been subsumed under the newly organized Ministry.

##### *Ministry of Health*

The Ministry of Health shall have the powers and duties to:

1. formulate the country's health sector development program; follow up and evaluate the implementation of same;
2. prepare the country's health services coverage map; provide support for the expansion of health infrastructure;
3. support the expansion of health services coverage; follow up and coordinate the



- implementation of health programs;
4. provide appropriate support to promote research activities intended to provide solutions for the country's health problems and for improving health service delivery;
  5. follow up and coordinate the implementation of national nutrition strategies;
  6. devise and follow up the implementation of strategies for the prevention of epidemic and communicable diseases;
  7. take preventive measures against events that threaten the public health; in the events of an emergency situation coordinate measures of other stakeholders to expeditiously and effectively tackle the problem;
  8. expand health education through various appropriate means;
  9. ensure adequate supply and proper utilization of essential drugs and medical equipment in the country;
  10. supervise the administration of federal hospitals; collaborate on the capacity building activities of the federal university hospitals;
  11. collaborate with the appropriate bodies in providing quality and relevant health professional trainings within the country;
  12. Ensure the proper execution of food, medicine and health care administration and regulatory functions;
  13. Lead the national social health insurance system and oversee its implementation;
  14. Direct, coordinate and follow up implementation of the country's health information system.

### ***Ministry of Women, Children and Youth***

The Ministry of Women, Children and Youth shall have the powers and duties to:

1. design strategic plan to ensure that opportunities are created for women and youth to actively participate in political, economic and social affairs of the country and implement same;
2. lead and support activities of awareness creation and movement on the rights of women and children;
3. ensure that due attention is given to assign women for decision-making positions in various Government organs;
4. devise means for the proper application of women's right to affirmative action guaranteed at the national level and follow up the implementation of same;
5. undertake studies to identify discriminatory practices affecting women, facilitate the creation of conditions for the elimination of such practices, and follow up their implementation;
6. design strategies to effectively prevent and take measures against gender-based violence against women; implement same in collaboration with relevant organs;

7. facilitate the setting up centers for provision of holistic health, psychological, legal and rehabilitation services for women who were victims of violence; and follow up the implementation of same;
8. encourage and support women and youth to be organized, based on their interests and needs, with a view to defending their rights and solving their problems;
9. in collaboration with the relevant organs, conduct studies to identify areas of job opportunities for women and youth; design programs and projects so women and youth can benefit from these opportunities by organizing themselves in to cooperative associations;
10. facilitate the setting up of development funds to create job opportunities for and ensure economic benefits to women and youth;
11. work in collaboration with relevant organs to support women and youth living in poverty to improve their livelihoods through improving saving culture, using alternative energy sources and use other appropriate technology;
12. design techniques to prevent harmful practices that cause harm to women and children; implement same upon approval;
13. coordinate actions of all stakeholders to protect the rights and well-being of children;
14. coordinate actions of all stakeholders to exert a concerted effort towards providing the proper awareness-creation and training on good parenting, character building, support, care and rehabilitation for parents and caretakers;
15. design strategies to ensure local options of care and support, including adoption, for orphaned children and children exposed to risk due to various reasons; implement same upon approval; follow up care taking of children adopted abroad;
16. design strategies to ensure that government and private actors carry out their obligations to guarantee that children are beneficiaries of the development of the country; follow up implementation of same;
17. in collaboration with the relevant regional government organs and other relevant bodies, design techniques necessary to implement the constitutional protection given to the family as the fundamental unit of society; follow up implementation of same;
18. design strategies to follow up and regulate that the preparation of policies, legislations, development programs and projects by Federal Government organs give due considerations to the issues of women, children and the youth;
19. conclude international treaties relating to women and children in accordance with law and, follow up the implementation of same and submit reports to the concerned bodies;
20. Collect, compile and disseminate to relevant stakeholders' information on the objective realities of women, children and the youth.

## **Ministry of Labor and Skills Development**

The Ministry of Labor and Skills Development shall have the powers and duties to:

1. ensure and follow up the proper enforcement of labor laws and administrative rules;
2. follow up and support the labor relation of enterprises situated in more than one Regional State;
3. establish a system to prevent occupational accidents and occupational diseases; issue occupational health and safety standards and supervise their implementation;
4. set up a system to ensure industrial peace and ensure its proper implementation;
5. encourage and support employers and workers to form organizations and thereby exercise their rights of collective bargaining;
6. Encourage the practice of bipartite forums between workers and employers and tripartite forums involving the Government;
- 7 Register employers' association and trade unions established at national level;
- 8 register trade unions and collective agreements relating to Federal Public Enterprises situated in Addis Ababa and Dire Dawa cities; carry out labor inspection services in such enterprises; provide conciliation services to amicably settle labor disputes arising between employers and employees;
- 9 set a mechanism to minimize occurrence of labor disputes and establish efficient system for settlement of same;
- 10 establish national labor sector information system and realize its implementation; establish and put into operation a national labor market information system;
- 11 work in collaboration with the concerned bodies to strengthen the social protection system to improve and ensure the social and economic wellbeing of citizens and, in particular to:
  - a) enable persons with disabilities benefit from equal opportunities and full participation;
  - b) enable the elderly to get care and support and enhance their participation;
  - c) prevent social and economic problems and provide the necessary services to segments of the society under difficult circumstances particularly the elderly and people with disabilities;
- 12 in cooperation with concerned bodies, establish a labor administration system around the labor relation that enables the proper transition of the informal economy to the formal economy;
- 13 enhance the accessibility of efficient and equitable employment services;
- 14 issue work permits to foreign nationals and, in cooperation with concerned bodies, supervise the compliance therewith;
- 15 in cooperation with concerned bodies, regulate the Ethiopians overseas employment;

### ***Ministry of Urbanization and Infrastructure***

The Ministry of Urbanization and Infrastructure shall have the powers and duties to:

1. design and upon approval implement policies, strategies, development packages and programs relating to urban development and construction;
2. undertake studies relating to urbanization, in coordination with other relevant bodies establish system for integrated urban development and preparation of national spatial

- plan; follow up implementation of same;
3. outline directions that ensure compliance of urban centers with regional and national development schemes and integrated urbanization plans;
  4. undertake studies for the integration of urban and rural development activities in collaboration with regional states; follow up implementation of same; provide to urban centers all-round and coordinated support so as to make them development hubs of their surroundings;
  5. design strategies that ensure balanced development and population settlement in urban centers; implement same in collaboration with the pertinent federal and regional government bodies;
  6. put in place new procedures for economic use of urban land; follow up implementation of same g) set standards relating to categorization and role definition of urban centers; establish criteria for urban sanitation, beautification and greenery development; support and follow up implementation of same;
  7. provide capacity building support to regions to improve service delivery and ensure good governance in urban centers; facilitate the integration of infrastructure and services provision;
  8. undertake studies for integration of urban development with poverty reduction; support the implementation thereof; and ensure food security and job creation in the urban settings;
  9. follow up the activities of Addis Ababa and Dire Dawa city administrations in relation to urban development and construction;
  10. build cadaster and immovable property market systems that ensure transparency and accountability and enhance free market economy; provide support to ensure supply of developed urban land in accordance with demands in urban centers;
  11. undertake study to establish urban development finance improvement system; cause its approval by the concerned organ; collect rising fund; provide support and follow-up to ensure institutional capacity building for implementation;
  12. without prejudice to powers given by law to any other government organ, ensure the proper administration of houses owned by the Federal Government;
  13. undertake studies on the provision of residential housing to citizens; and support implementation of same once approved by the concerned organs;
  14. design long term strategic plans that enhance proper management of the construction sector; implement same;
  15. execute studies on the development of the sector in coordination with pertinent bodies;
  16. create conducive environment for the development of internationally competitive construction industry; establish transparent and accountable system for the management of design, bidding and contract contents; and follow up enforcement of same;
  17. regulate construction works in all sectors; determine construction work standards; and follow up compliance with standards;

18. extend support in the preparation of designs, construction contracts and supervision of construction works involving buildings financed by federal budget;
19. support the development of appropriate organizational set-up, systems and human resource required for implementation of building codes and standards in cities;
20. design strategy to enhance the capacity and sustainability of local construction enterprises; follow up implementation of same;
21. register engineers and architects engaged in the construction sector; issue certificates of professional competence; determine the grades of contractors and consultants; issue certificates of competence to contractors and consultants operating in more than one regional states;
22. undertake research to improve the types and qualities of local construction materials;

### ***Ministry of Agriculture (MoA)***

The Ministry of Agriculture shall have the powers and duties to:

1. follow up and provide support for the establishment of rural land management and sustainable grazing land utilization systems ; organize a national data base on same;
2. facilitate the establishment of accessible rural finance system by the relevant finance institutions to farmers, pastoralists, and semi-pastoralists;
3. foster basin developments on water bodies in pastoral and semi-pastoral areas; establish natural and irrigated pasture utilization system; foster small-scale irrigation developments;
4. establish and run training centers that assist to the enhancement of agricultural development and the improvement of rural technologies;
5. coordinate activities relating to food security and job creation schemes;
6. follow up the expansion of basin developments, infrastructure and fodder banks necessary for livestock development;
7. in collaboration with the relevant organs, formulate techniques for a successful urban agriculture, and a procedure for their implementation;
8. promote the expansion of effective technologies, agricultural extension, trainings, and capacity building services that help to improve production and productivity and quality of crops, livestock and fishery, and reduce wastages;
9. formulate national livestock breeding policy, strategy and program;
10. establish a system that ensures access to quality veterinary services to improve the prevention and timely control of animal and fish diseases; cause the building of animal health laboratories in the country and build their capacity;
11. establish early warning system in respect of current situations that affect crop production, and livestock and fishery development;
12. build capacity for supplying, distributing, and marketing of inputs for crop production, livestock and fishery development in order to ensure reliable supply of produce; establish

- and follow up the implementation of a quality control system; provide technical support to improve supply of products through the creation of market linkage;
13. establish a system to ensure that all crop, livestock, fish, livestock and fish products marketed maintain the required quality; follow up the implementation of such system; provide technical support to create modern production systems and market linkages;
  14. by creating effective collaboration with the relevant organs, ensure that agricultural investment activities are undertaken properly; devise strategy to promote large agricultural investments;
  15. work in coordination with relevant Federal Government and Regional State bodies to strengthen the linkage between agriculture and industry;
  16. develop a system that ensures integration and coordination of stake holders engaged in crop production and livestock development research;
  17. ensure the proper execution of pesticide and animal feed quality control, and veterinary administration and regulatory activities;
  18. establish a system that enables the prevention of plant and animal diseases; lead research and studies necessary to this end; conduct disease-control activities in respect of plants, cereals, animals and animal products crossing Ethiopia's border;
  19. ensure the proper execution of functions relating to coffee and tea development and marketing activities;
  20. promote the expansion and strengthening of agricultural cooperatives;
  21. establish a mechanism for the implementation of soil erosion prevention strategies by identifying its causes; design mechanisms for the improvement of soil fertility, protection of soil health, and for establishing national soil database;
  22. cause the expansion of integrated farming to ensure sustainable development and maintenance of natural resources;
  23. coordinate, in collaboration with concerned organs, activities that enable to mitigate drought vulnerability;
  24. determine conditions for the issuance of certificates that may be required by companies engaged in agricultural investment

### ***3.2.2 Institutions at the Commission Authority and Agency Level***

#### **The Environment, Forest and Climate Change Commission (EFCCC)**

Ministry of Environment, Forest and Climate Change devolve its power from the level of ministry to a commission during the restructuring in 2018. However, the powers and duties of the MoEFCC remains the same to that of the ministry and it is directly accountable to the Prime Minister. The Commission had the following powers and duties.

1. Coordinate activities to ensure that the environmental objectives provided under the Constitution and the basic principles set out in the Environmental Policy of the Country

are realized;

2. Establish a system for evaluating and decision making, in accordance with the Environmental Impact Assessment Proclamation, the impacts of implementation of investment programs and projects on environment prior to approvals of their implementation by the concerned sectoral licensing organ or the concerned regional organ;
3. Coordinate actions on soliciting the resources required for building a climate resilient green economy in all sectors and at all Regional levels; as well as provide capacity building support and advisory services;
4. Establish an environmental information system that promotes efficiency in environmental data collection, management and use;
5. Enforcing and ensuring compliance to the ESIA proclamation which currently is being implemented through delegated authority provided to sector ministries;
6. Reviewing ESIA's and monitoring the implementation of ESIA recommendations which is also in part being implemented through delegated authority provided to sector ministries;
7. Regulating environmental compliance and developing legal instruments that ensure the protection of the environment;
8. Ensuring that environmental concerns are mainstreamed into sector activities; and
9. Coordinating, advising, assessing, monitoring and reporting on environment-related aspects and activities

EFCCC is once again reestablished in the name Environmental Protection Agency

### ***National Disaster Risk Management Commission (NDRMC)***

The Commission shall have the following powers and duties to:

1. ensure that disaster risk management is mainstreamed into Government development policies, strategies, development plans and programs, and in the plans of the private sector as well as in the school curricula; and provide support, as may be necessary, to concerned bodies in relation to such issues;
2. ensure and follow-up the inclusion of disaster risk management in the plans of the executive organs which are identified as lead sector institution in the Disaster Risk Management Policy and Strategy document;
3. collect and compile nationwide action plans for the implementation of disaster risk management policy and strategy; regularly monitor and evaluate implementation of same, and submit at least bi-annual performance reports to the Disaster Risk Management Council;
4. coordinate, follow up and evaluate disaster risk reduction, disaster response and rehabilitation programs of disaster victim;
5. implement, lead, and coordinate responses in the event of disasters that either do not fall under the responsibility of any one of designated lead sector institutions or a sudden disaster that is beyond the capacity of the lead sector institution;

6. hold and administer disaster response fund, relief food and non-food stock;
7. whenever necessary, emergency relief food supplies, distribute up on discharging from concerned government institution in charge of administration of the strategic food reserve;
8. in collaboration with concerned bodies, lead and coordinate work on the development and revision of disaster risk profiles at the national level;
9. on the basis of the disaster risk profile, develop and implement comprehensive contingency plans at all levels; facilitate conditions to undertake regular and planned simulation exercises at all levels to assess existing emergency response preparedness, including the contingency plan, and take corrective measures accordingly;
10. lead and coordinate studies and assessments conducted at national level before, during, and after the disaster period including disaster risk forecaster;
11. lead and coordinate the Federal Early Warning and Emergency Coordination Center by supporting it with modern technologies; support the establishment of similar centers in lead sector institutions at Federal, Regional, Zonal and *Woreda* Administration levels, as required;
12. facilitate conditions and provide support for wider application of information and communication technologies for disaster risk management; serve as a repository for disaster risk management information at National level and provide support, as required, to enable the Regional Administrations to set up a similar repository;
13. following the official declaration of a disaster and upon the decision of the Disaster Risk Management Council, mobilize resources from domestic and international sources;
14. utilize secured resources by itself and through other concerned lead sector institutions found at Federal and Regional Administrations levels for emergency response;
15. in collaboration with concerned bodies, establish and operate a mechanism to enable the disaster risk management system to get comprehensive support from volunteers organized on a voluntary basis and engaged in result-oriented disaster risk management activities;
16. in accordance with the relevant laws and directives of country, establish working relationship and collaborate with relevant international organizations, governmental and private organizations to facilitate the smooth implementation of the National Disaster Risk Management Policy and Strategy;
17. own property, enter into contracts, sue and be sued in its own name;
18. Perform other related necessary activities to meet its objectives.

### ***National Meteorology Agency (NMA)***

In accordance with proclamation No. 201/1980 the National Meteorology Agency is subsumed under the Ministry of Water and Energy has the following powers and duties to:

1. Establish and operate a national net-work of meteorological stations designed to represent various climatic regions of Ethiopia and to satisfy the needs of various national development plans and activates.
2. Collecting all meteorological data;



3. Exchange meteorological data in accordance with international agreements to which Ethiopia is a party;
4. Establish and operate communication systems, in accordance with the law for the collection and dissemination of meteorological data;
5. Publish and disseminate analyzed and interpreted meteorological data and meteorological forecasts;
6. Give advance warning on adverse weather conditions; disseminate advice and educational information through the mass media; and provide, upon request meteorological services to any person;
7. Collect and centrally administer, notwithstanding the provisions of Article 5 this proclamation, any meteorological data collected by any person in the country;
8. Control air pollution and maintain the natural balance of the air in the country;

### ***Basins Development Authority (BDA)***

The Basins Development Authority, subsumed under the Ministry of Water and Energy has the following powers and duties:

1. undertake policy studies, surveys and researches needed to create a conducive environment for the implementation an integrated water resource management within basins; and follow up implementation upon approval by the relevant body;
2. facilitate and undertake activities necessary for implementation of integrated water resources management in basins;
3. ensure that projects, activities and interventions related to water in the basins are, in line with the integrated water resources management process;
4. develop plans for protection and sustainable uses of basins; follow-up implementation once it is approved by the relevant organ;
5. develop and implement basin models in order to guide and support strategic planning of water resources and water administration functions;
6. Identify measures that should be taken against pollution and damage to basins; implement same in collaboration with relevant organs;
7. Regional States by law, issue permits applicable to the basins' water use and water works, and ensure that the terms of the permits are complied with;
8. work in collaboration with relevant organs to support efforts to expand irrigation works within basins;
9. undertake administration of river training activity;
10. measure, collect, compile, analyze and disseminate information for proper planning, administration and steering of water resources in the basin;
11. give advice and technical support to the Ministry of Water, Irrigation and Energy on dispute resolution in relation to the allocation and use of water resources of the basins;
12. ensure continuous collaboration with Regional Governments organs and other relevant

- bodies by setting up a forum for effective networking;
13. Prepare and provide necessary information on trans-boundary basins to the concerned body in charge of negotiations with other countries;
  14. Develop and manage basin information system;
  15. Prepare and update basin master plans; implement and support the implementation of the same upon approval;
  16. Prepare basin development and management plans, submit the plan to the Ministry, follow up the implementation of the plans upon approval;
  17. Conserve, protect and manage water bodies and related ecosystem.
  18. Study and implement flood protection forecasting and early warning works. Protect and save lives and properties in case of flood and drought, by implementing various flood protection and drought mitigation measures in coordination with relevant bodies;
  19. Prepare and submit to the ministry means of optimal and equitable allocation and utilization of water bodies that traverse across or lie between more than one regional state among various uses and regional states.
  20. Study, generate policy ideas, follow-up the implementations of the equitable and sustainable utilizations and management of the trans-boundary and boundary rivers, lakes and aquifers;

### ***3.2.3 Delegation to the Sector Ministries***

Some ministries are delegated to carry out to review and approve ESIA reports through environmental Units established under Ministries. These Sector Environment Units have the responsibility of coordinating and implementing project activities in line with the environmental laws and guidelines. To this end, the Environmental Units established under the ministries will play an important role in ensuring development projects are implemented as per the EIA proclamation and guidelines. However, it is important to note that capacity of these units is limited and capacity gaps will have to be filled.

### ***Regional Offices Responsible for Environment***

At regional level, there are environmental bureaus to implement environment management systems within their respective jurisdictions. Proclamation 295/2002 requires regional states to establish their own regional environmental agencies. The regional environmental agencies are responsible for the formulation of environmental tools relevant to the region. These agencies are also responsible to monitor and supervise regional development projects implemented according to the environmental proclamations and guideline.

The institutional set up of regional environmental agencies varies from region to region. In many of the regions such as SNNPR, Oromia, Amhara, and Gambella, they established separate institutions in the form of Environment, Forest and Climate Change Authorities while in others

such as Tigray and Benshangul placed it under Land Use Administration and Utilization Agency EPLAUA).

The regional offices responsible for environment have the responsibility of supervising project implementation within their jurisdiction as per federal EIA guidelines.

The project is planned to be implemented in the Awash River Basin Rift Valley Lakes Basin and Omo Gibe River Basin. Environmental management tools developed by the regions where the project is to be implemented are summarized in the table below.

***Table 3: Summary of Existing Institutions that have Legislations for Environmental and Social Management Instruments at Regional Level***

Region	Responsible Regional Environment Bureau/Agency	ESIA Regulations Enacted at Regional Level	Other Environmental Key Management Legislations/Guidelines			Remarks
			Pollution Control	Solid Waste Management	Regional Guideline for ESIA	
Oromia	Oromia EFCCA	Yes	Yes	No	No	It has zonal and <i>woreda</i> level Environment Offices
Amhara	Amhara EFWPPDA	Yes	Yes	No	Yes	-ESIA guideline Directive 01/2010 - It has zonal and <i>woreda</i> level Environment
SNNPR	SNNPR EFCCA	No (Draft level)	No (Draft level)	No	No	-Apply Federal ESIA law & guideline. - It has zonal and <i>woreda</i> level
Afar	Afar EPRLUA	Yes	Yes	No	No	Apply Federal ESIA procedural guideline
Somali	Somali EFCCB	Yes	Yes	Yes	Yes	Apply Federal ESIA procedural guideline
AA Administration	AA Environmental Protection Authority	Yes	Yes	Yes	Yes	Apply Federal ESIA procedural guideline

Region	Responsible Regional Environment Bureau/Agency	ESIA Regulations Enacted at Regional Level	Other Environmental Key Management Legislations/Guidelines			Remarks
			Pollution Control	Solid Waste Management	Regional Guideline for ESIA	
Dire Dawa Administration	Dire Dawa Environmental Protection Authority	Yes	Yes	Yes	Yes	Apply Federal ESIA procedural guideline
Sidama Region	Not yet established (new region)	No	No	No	No	Not yet established , May use federal ESIA procedural

### 3.2.4 Zonal and Woreda Level Environment, Forest, Land Utilization, and Climate Change Offices

The ESMF team assessed the existing institutional arrangement to implement the ESMF of this project at zonal, and *woreda* level. According to the assessment the Environment Authorities of SNNPR and Afar are found to have parallel offices at *woreda* level. Many of the regional environment authorities have zonal environment offices except for Tigray Gambella and Afar regions.

Except in Amhara region, the roles and responsibilities of the *woreda* level environmental organs are almost identical. Their main areas of responsibility fall in carrying environmental performance monitoring and follow up of development projects for which ESMPs and screening reports are reviewed and approved.

In Amhara region, the Authority has prepared and transmitted a list of the type of projects that can be reviewed and approved at *woreda* and zone levels. The SNNPR environment authority has generally given the mandate to review and approve all types of projects at its zonal level offices, but it allows them to seek assistance of the regional head office when they find it difficult reviewing the ESIA reports. Among others, the responsibilities of zonal and *woreda* level Environmental offices include:

- Enforcing and ensuring compliance to the ESIA proclamation which currently is being implemented
- Reviewing ESIAs and monitoring the implementation of ESMP recommendations;
- Regulating environmental compliance that ensure the protection of the environment;
- Ensuring that environmental concerns are mainstreamed into sector activities; and

- Coordinating, advising, assessing, monitoring and reporting on environment-related aspects and activities

It is important to note here that existing capacity and staffing for the implementation social and environmental safeguard measures at *woreda* environment office level is very limited and requires further support.

### **3.3 Applicable International Conventions and Protocols Endorsed by Ethiopia**

Ethiopia has ratified several international/multilateral environmental conventions and protocols. Many of the principles and provisions in those conventions and protocols have been addressed in the national environmental policies and regulations. Accordingly, Article 9(4) of the constitution of the Federal Democratic Republic of Ethiopia states that once an international agreement is ratified through the accepted or established procedure, it automatically becomes an integral part of the law of the land. Therefore, the following international conventions and protocols are relevant to the IDRMP.

#### **UN Framework Convention on Climate Change**

The convention provides a framework for international cooperation to combat climate change by limiting average global temperature increases and the resulting climate change and coping with its impacts. The objective of this convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous interference with the climate system. Ethiopia ratified this convention through proclamation No. 97/1994 on May 2/1994. This convention considers the fact that climate change has trans-boundary impacts.

#### **Paris Agreement to the United Nations Framework Convention on Climate Change**

The Paris agreement is a legally binding agreement on climate change and it was ratified by Ethiopia in March 2017. The agreement's goal is to limit global warming to well below 2, preferably to 1.5 degree Celsius, compared to pre-industrial level. The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.

#### **The United Nations Conventions to Combat Desertification**

The objective of the convention is to combat desertification and mitigate the effects of droughts in countries experiencing serious drought and desertification, particularly in Africa. Ethiopia has ratified the convention through its proclamation No. 80/1997.

#### **Convention on Biological Diversity**

The convention on biological diversity has three goals. These are (i) conservation of biodiversity, (ii) sustainable use of the components of biodiversity, and (iii) fair and equitable sharing of the benefits arising from the use of genetic resources. Ethiopia ratified the convention in 1994.

### **Cartagena Protocol on Biosafety to the Convention on Biological Diversity**

The protocol protects biological diversity from the potential risk of genetically modified organisms resulting from modern biotechnology. It aims to ensure the safe handling; transport and use of living modified organisms (LMOs) are resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. Ethiopia ratified the protocol in Oct 2003.

### **Convention for the Protection of the World Cultural and Natural Heritage**

Each State party of the convention recognizes that the duty of ensuring the identification, protection, conservation, presentation, and transmission to future generations of cultural and natural heritages belongs primarily to that State.

Ethiopia ratified the convention on 23 November 1972.

### **Occupational Safety and Health Convention, 1981 (ILO - No. 155)**

Article 4 of the convention stated that each member shall formulate, implement, and periodically review a coherent national policy on occupational safety, occupational health, and the working environment with the aim of the policy being to prevent accidents and injury to health arising out of, linked with or occurring in the course of work, by minimizing, so far as is reasonably practicable, the causes of hazards inherent in the working environment. The main spheres of actions are:

- design, testing, choice, substitution, installation, arrangement, use and maintenance of the material elements of work (workplaces, working environment, tools, machinery and equipment, chemical, physical and biological substances and agents, work processes)
- relationships between the material elements of work and the persons who carry out or supervise the work, and adaptation of machinery, equipment, working time, organization of work and work processes to the physical and mental capacities of the workers;
- training, including necessary further training, qualifications and motivations of persons involved, in one capacity or another, in the achievement of adequate levels of safety and health;
- communication and co-operation at the levels of the working group and the undertaking and at all other appropriate levels up to and including the national level;
- the protection of workers and their representatives from disciplinary measures as a result of actions properly taken by them in conformity with the policy referred to in Article 4 of

this Convention.

The convention and Recommendation R164 provide lists of guiding principles to be followed at a national level and at the level of the undertaking.

Ethiopia ratified this convention in Jan 1991.

### **Other ILO Conventions**

Ethiopia ratified 23 ILO conventions of which the following are the main:

- Forced labor convention (No. 29) – aims to suppress the use of forced or compulsory labour in all its forms within the shortest possible period.
- Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) – Enables workers and employers, without distinction whatsoever, shall have the right to establish and, subject only to the rules of the organization concerned, to join organizations of their own choosing without previous authorization.
- Right to Organize and Collective Bargaining Convention, 1949 (No. 98) - workers shall enjoy adequate protection against acts of anti-union discrimination in respect of their employment.
- Abolition of forced labor convention (No. 105) - to suppress and not to make use of any form of forced or compulsory labour.
- Minimum Age Convention, 1973 (No. 138) - to ensure the effective abolition of child labour and to raise progressively the minimum age for admission to employment or work to a level consistent with the fullest physical and mental development of young persons.
- Worst Forms of Child Labour Convention, 1999 (No. 182) - to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency.

### **3.4 Environment and Social Standards (ESSs) Relevant to the Proposed Project**

According to the World Bank Environmental and Social standards, projects supported by the Bank through Investment Project Financing are required to meet the Environmental and Social Standards (ESS). The ESS is designed to help Clients to manage the risks and impacts of a project, and improve their environmental and social performance, through a risk and outcomes-based approach. Clients are required to manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, *proportionate to the nature and scale of the project* and *the potential risks and impacts*. This project is anticipated to have substantial environmental risks and high social risks. The overall environmental and social risk rating of the project is high.

The client will prepare an Environmental and Social Commitment Plan (ESCP) outlining detailed commitments to support compliance with the ESS of the Environmental and Social Framework (ESF) of the Bank. The ESCP will describe the different management tools that the Client will use to develop and implement the agreed measures and actions. These management tools will include, as appropriate, environmental and social management plans, environmental and social management frameworks, operational manuals, management systems, procedures and practices. In the context of the current IDRMP, as the specific sites for the implementation of the subproject activities has not been identified at this stage, ESMF has been chosen as a management tool for the project. However, during implementation stage, site specific safeguards instruments (ESMP, ESIA and RAP) will be prepared to mitigate risks associated with the subproject activities.

The environmental and social assessment will identify and assess, to the extent appropriate, the potential environmental and social risks and impacts of Associated Facilities. The Client will address the risks and impacts of Associated Facilities in a manner proportionate to its control or influence over the Associated Facilities. To the extent that the Client cannot control or influence the Associated Activities to meet the requirements of the ESSs, the environmental and social assessment will also identify the risks and impacts the Associated Facilities may present to the project.

#### ***ESS1 on Assessment and Management of Environmental and Social Risks and Impacts***

This ESMF will serve as an instrument to satisfy the Bank's ESS1 on Assessment and Management of Environmental and Social Risks and Impacts. The Environmental Assessment takes into account the natural environment (air, water, and land); human health and safety; as well as social aspects (involuntary resettlement and physical cultural resources) in an integrated way.

IDRMP is expected to cause displacement as a result construction of retention ponds, excavation of quarry sites, borrow pits and disposal of construction wasted. These project activities will require assessment of environmental and social risks and impacts and assessment of these risks impacts makes ESS1 relevant to this project.

#### ***ESS2 Labor and Working Conditions***

Project activities during the the construction and operation of flooding risk management structures is expected to use huge labour force. It is therefore important to take Occupational Health and Safety (OHS) measures to protect the health and safety of the project work force. A Labor Management Procedure (LMP) identifying the main labor requirements and labor risks associated with the Project will be prepared based on the requirements of ESS2 and national labor laws, prior to project appraisal thus making ESS2 relevant to the proposed project.



### ***ESS3 Resource Efficiency and Pollution Prevention and Management***

Potential risks associated with resource efficiency such as the use of raw materials (e.g. during dike and other infrastructure construction) will be evaluated during environmental and social assessment. Resource efficiency concerns may also arise from sources and volume of construction materials, use of machinery for excavation and dredging during the construction phase of the proposed project. Furthermore, many construction activities consume energy and water which also entail efficient use. ESS3 is, therefore, found relevant to the proposed project.

### ***ESS4 Community Health and Safety***

Although river channel improvement, levees and dikes can alleviate flooding problems in the treatment area, flood risks are likely to increase downstream (i.e. they tend to pass floodwater on to downstream areas). The ESMF will provide a procedure to assess and identify mitigation measures to minimize community health and safety risks during construction and operation, taking into account the project context and vulnerable groups. The environmental and social assessment shall indentify potential adverse impacts due to potential failure of the flood protection infrastucture such as micro-dam, sand and check dam structure to local communities. The need to address community health and safety during the implementation of the proposed project demonstrate the relevance of ESS4 to the eproposed project.

### ***ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement***

Useful land is expected to be lost during the construction of retantion ponds, micro-dams and the excavation of construction materials from quarry sites and borrow pits. The land that will be lost could be farm land currently in use by the community and may sometimes result in involuntary resettlement. ESF now require the Borrower to prepare proportional resettlement plan for land acquisition regardless of the number of affected people and such a requirement will make ESS5 relevant to IDRMP.

### ***ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources***

Construction and operation of the flood risk management structures could have some adverse impacts on biodiversity. Channel smoothing and clearing as well as dredging can have adverse impacts on aquatic organisms and fisheries by disrupting their habitats, disruption of migratory routes and changes in water quality (e.g. sediment load). River channel modification measures could cause destruction of bank side vegetation. Flood risk management structures such as levees and dikes could be obstacles to wildlife passage unless alternative passage is rovided.. Furthermore, loss of wildlife habitat could occur if critical habitats are not properly identified and control measures are not implemented prior to project construction.

These types of impacts on the genetic resources will make ESS6 relevant to the proposed project.

### ***ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities***

The project will be implemented in the Somali and Afar regions where the underserved communities (e.g. pastoralist and semi-pastoralist) who meet the criteria of ESS7 may present or collective attachment could be affected thus ESS7 is relevant for this project.

### ***ESS8 Cultural Heritage***

Cultural heritage site like Tiya is found in the Omo Ghibe River Basin where the IDRMP is planned to be implemented. There could be more cultural heritage sites in the project area which are not yet discovered. The project could adversely affect these sites consequently making ESS8 relevant to this IDRMP.

### ***ESS9 Financial Intermediaries***

No financial intermediary will be involved.

### ***ESS10 Environmental and Social Standard: Stakeholder Engagement and Information Disclosure***

The objective of this ESS10 is to engage stakeholder effectively in order to improve environmental and social sustainability of the project, enhance acceptance, and make significant contribution to successful project design and implementation. For this purpose, the project supported by the Bank must identify stakeholders and construct and build good working relationships with them in order to avoid conflicts that may arise, assess the level of stakeholder interests, support and concerns, take stakeholders views, concerns into account during project implementation. In this identification, stakeholders included Project Affected People (PAPs), these are individuals or organization whose properties (land, houses, infrastructures, business, cultural features) and other aspects that will be affected by the project and other who may be interested in the project implementation. In addition, this ESS, will aim at promoting and providing means for stakeholders' engagement in the whole project cycle, and inform stakeholders on the project objectives, environmental and social risks in appropriate manners. The need to involve relevant stakeholders and disclose information to the relevant stakeholders will make ESS10 relevant to this project.

### ***OP/BP 7.5 Projects on International Waterways***

OP/BP 7.5 applies to any river or water body that flows through two or more states. Further, the policy applies to flood control projects. Some of the project priority basins (such as Omo-Gibe basin) drains into neighboring countries and thus the policy is applicable and thus triggered.

## **3.5 Relevant World Bank EHS Guidelines for the integrated flood risk Management project**

The Environment, Health and Safety general guidelines provide information on a variety of issues which need to be adopted to mitigate adverse environmental and safety issues that may likely arise during the implementation of IDRMP subprojects. The most relevant section of the guidelines includes the following. The four sections of the general EHS guideline are relevant to the proposed project in one way or another.

### ***Environmental***

The general Guidelines section on Air Emissions and Ambient Air Quality, Water Conservation, Hazardous Materials Management, Waste Management, Noise and Contaminated Land in relation to environmental issues under the environment is relevant to this project. This section also values for most air, water, and soil pollutants.

### ***Occupational Health and Safety***

The general Guidelines section on General Facility Design and Operation, Communication and Training, Physical Hazards, Personal Protective Equipment (PPE) and monitoring in relation to occupational health and safety are relevant to this project

### ***Community Health and Safety***

The general Guidelines section on Water Quality and Availability, Structural Safety of Project Infrastructure, Traffic Safety, Disease Prevention and Emergency Preparedness and Response in relation to Community Health and Safety are relevant to this project

### ***Construction and Decommissioning***

The general Guidelines section on Environment, Occupational Health & Safety and Community (OHSC) in relation to Construction and Decommissioning are found to be relevant to this project.

Other relevant Bank's EHS guideline is the Construction Materials Extraction guideline.

### 3.6 Gap Analysis between the national regulations and ESSs

*Table 4: Gap Analysis between the national regulations and ESSs*

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
ESS-1: Assessment and Management of Environmental and Social Risks and Impacts	ESS-1 is applicable to the IDRMP	The Federal EIA Proclamation No. 299/2002 and related regional EIA regulations mandatorily requires a project proponent to undertake EIA. The Federal EIA procedural guideline (2003) classifies projects into Schedule I, II and III to facilitate the undertaking of EIA proportionate to the risks and impacts of each project. The EIA proclamation and regulations seek all direct, indirect and cumulative impacts likely to occur during project life cycle are considered in the assessment. The stated legislation and regulation also require stakeholder and community consultations to be carried as part of the EIA process. The preparation of ESMP based on mitigation hierarchy and monitoring plan is also required by the EIA proclamation and associated guidelines.	<p>-Requirement of the EIA proclamation and regional regulations do not cover “associated facilities” as defined by the ESF.</p> <p>-Requirements of the EIA proclamation and regional regulations do not explicitly seek for consideration of risks and impacts associated with primary suppliers as defined by the ESF during EA.</p> <p>-Apart from the presence of effluent standards for specified industrial sectors, the EIA</p>	<p>-EA requirements for associated capital investments shall be addressed as part of the present ESMF process when it occurs;</p> <p>-The application and use of the World Bank EHS guidelines in the present ESMF to EA of subprojects;</p>

ESS-2: Labor and Working Conditions	ESS-2 is applicable to the IDRMP	<p>The former Labor Proclamation No.377/2003 is repealed and substituted by the new Proclamation 1156/2019. The new legislation remains to be the labor legislation applied invariably all over the Country without customization to regional contexts. The labor law is applied to govern all aspects of employment relations based on a contract of employment that exists between a worker and an employer. The legislation covers formation of contract of employment defining the rules and conditions of employment, nondiscrimination, equal opportunity for women workers, the right to form trade unions (workers organizations), working conditions of young labor setting the minimum age for child Labor to be 15 and working conditions, and arbitration/conciliation mechanism to handle grievances and disputes of workers in relation to employment. The Labor law also covers occupational safety, health and work environment aspects. The labor law largely fulfills the requirements of ESS 2.</p> <p>Proclamation No. 568/2008 Rights to employment for Persons with Disabilities makes null and void any law, practice, custom, attitude and other discriminatory situations that limit equal opportunities for persons with disabilities.</p>	<p>All the rules of the labor law are applicable to employment relations based on a contract of employment that exists between a worker and an employer. The labor law is not applicable to community workers as it is not based on employment relations between worker and employer. Since IDRMP is engaged with community workers, this gap will create shortfalls on enforcing the OHS aspects by the Labor and Social Affairs Offices.</p>	<p>-The ESMF should adopt the provisions of ESS-2, especially the requirements of paragraphs 34 to 38 of this ESS and relevant sections of the EHSG.</p>
-------------------------------------	----------------------------------	--	--	--

ESS-3 Resource Efficiency and Pollution Prevention	ESS-3 is applicable to the IDRMP	<p>The requirements of ESS-3 are largely fulfilled by the following nation legislations and international Conventions which Ethiopia is a Party, which are widely referred during EIA studies. These include:</p> <ul style="list-style-type: none"> <li>-The Pollution Control Proclamation no. 300/2002 which set the binding provisions for prevention and control of pollution addresses management of hazardous waste; chemicals and radioactive materials, management of non-hazardous municipal waste, and set the provisions for issuing environmental standards including for air, water and various effluents. The proclamation is complemented by effluent standards for certain industrial sectors.</li> </ul> <p>Ethiopia has ratified and is party to the following three International Convention that help in managing / avoiding the use of restricted and banned pesticides, chemicals trade and trans-boundary movement of Hazardous wastes. These are:</p> <ul style="list-style-type: none"> <li>-The Stockholm Convention on POPs</li> <li>- The Rotterdam Convention on PIC procedures</li> <li>-The Basel Convention on trans-boundary movement of Hazardous Wastes.</li> </ul> <p>Besides the Proclamation for the Registration and Control of Pesticides (Proclamation No. 674/2010) provides for the procedures of approval and registration of pesticides to be imported or manufactured in Ethiopia.</p>	Detailed guidelines to support the avoidance, minimization or reduction of environmental and health impacts of pesticides during application are not sufficiently available.	The application of relevant sections of the General EHS and sector specific EHS guideline is advisable when appropriate
--	----------------------------------	---	--	---

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
ESS-4: Community Health, Safety and Security	ESS-4 is applicable to the IDRMP	Building Proclamation No. 624/2009 and Public Health Proclamation No.200/2000 contain certain provisions that partly address the issues of community safety in the areas of building designs and community exposure to health risks. Other regulations such as prevention of industrial pollution require industrial facilities to prepare emergency response systems. In general, some aspects of the ESS 4 are either fully or partially addressed across the existing sector legislations and regulations.	There are gaps in fully addressing the community Health, Safety and Security aspects as defined in the ESF.	The application of relevant sections of the General EHS and sector specific EHS guideline is advisable when appropriate.

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
ESS-5: Land acquisition and Involuntary Resettlement	ESS-5 is applicable to the IDRMP	The new Proclamation no 1161/2019 for expropriation of land for public purposes has provisions that address resettlement and compensation of involuntary resettlements caused by land acquisition for public purposes. The new proclamation provides for various types of compensation for resellers such as property, displacement and economic loss compensations. Resettlers are also entitled for replacement land substitution and compensation for disruption of social ties. Entitlement for compensation is based on legal land holding. Valuation of compensation will be based on current costs and values to replace the properties anew. The proclamation also consists of a provision for establishing resettlement fund, resettlement package to restore livelihood of resettlers and complaint hearing and appeal provision to address complaints in relation to resettlement and compensation.	The entitlements for compensation of resettlers is based on legal land holding and do not include informal settlers without any legal landholding.	The application of ESS 5 to bridge the gap and cover the informal resettlers during resettlement is recommended.



ESS-6: Biodiversity Conservation and Sustainable Management of Living Natural resources.	ESS-6 is applicable to the IDRMP	<p>The Federal EIA Proclamation no.299/2002 has defined the terms “Environment” and “Impact” broadly to include all forms of habitats, biodiversity, heritage and ecosystems. "Environment" means the totality of all materials whether in their natural state or modified or changed by human; their external spaces and the interactions which affect their quality or quantity and the welfare of human or other living beings, including but not restricted to, land atmosphere, whether and climate, water, living things, sound, odor, taste, social factors and aesthetics. "Impact" means any change to the environment or to its component that may affect human health or safety, flora, fauna, soil, air, water, climate, natural or cultural heritage, other physical structure, or in general, subsequently alter environmental, social, economic or cultural conditions. The impact of a project shall be assessed on the basis of the size, location, nature, cumulative effect with other concurrent impacts or phenomena, trans regional effect, duration, reversibility or irreversibility or other related effects of the project. The EIA report is required to contain information on the characteristics and duration of all the estimated direct or indirect, positive or negative impacts, as well as measures proposed to eliminate, minimize, or mitigate negative impacts. Thus, the requirements of ESS 6 are broadly addressed through the EIA process. There are also more specific sectoral laws and regulations which complement the EIA proclamation in conserving habitats and biodiversity such as:</p>	ESS-6 classified habitats as Natural, Modified, and critical with specific requirements for each while the national documents do not have such classification	The application of ESS- 6 to bridge the gap is recommended.
--	----------------------------------	--	---	---

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
		<ul style="list-style-type: none"> <li>-Development Conservation and Utilization of Wildlife Proclamation No. 541/2007</li> <li>-Wildlife Development, Conservation &amp; Utilization Council of Ministers Regulations No.163/2008.</li> </ul>		
ESS-7: Indigenous People	ESS-7 is applicable to the IDRMP	ESS7 is relevant for this project. ESS7 is applicable to the proposed project for it impacts the historically underserved communities residing in emerging regions such as the pastoralist communities in Afar, Somali regions, who meet the criteria of ESS7 in the context of Ethiopia. That is why, the social assessment on the underserved and other vulnerable groups has been incorporated as part of this ESMF. “Indigenous people” is not used in Ethiopia, rather those people who live in the four emerging regions (Afar, Somali, Benishangul and Gambella) as well as some pastoralist communities living in Oromiya and SNNP regions.	No gap	None

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
ESS-8: Cultural Heritage	ESS-8 is applicable to the IDRMP	As described above in ESS 6 the term “Impact” is defined broadly by the EIA proclamation. The definition reflects the kind of adverse impacts a project proponent is required to assess which includes any change to the environment or to its component that may affect flora, fauna, natural or cultural heritage, or in general, subsequently alter environmental, social, economic or cultural conditions. Thus, the Federal proclamation on EIA has provisions by which it considers the issues of cultural resources. Article 41 of Proclamation No. 209/2000 on research and conservation of cultural heritage also contains the measures that should be taken during chance finding of heritages.	Though natural and cultural heritages are required to be included during EIA process, the preparation of a Cultural Heritage Management Plan (CHMP) as indicated in the ESF is not required by the national EIA law.	The application of ESS 8 requirement for CHMP is advisable when appropriate.
ESS9 Financial Intermediaries	No financial intermediary will be involved In this project and therefore is not applicable	Not applicable to this project	Not applicable to this project	None

<b>ESF Environmental and Social Standards (ESS)</b>	<b>Status of Application to the Project</b>	<b>Available National Policy and Legislation to Fulfill the Performance Standard</b>	<b>Gaps</b>	<b>Measures to Bridge the Gaps</b>
ESS 10: Stakeholder Engagement and Information Disclosure	ESS-10 is applicable to the IDRMP	Article 15 of the EIA Proclamation requires public participation/consultation during EIA study process and public disclosure of EIA reports. Current practice also shows public consultations are carried during EIA studies and minutes of consultation produced. Incorporation of the views and concerns of stakeholders into the EIA report usually carried.	The stakeholder engagement and information disclosure are not public consultations requirement is focused on initial EIA study phase and do not continue through the project lifecycle as required by ESS-10. Thus, preparation of Stakeholder Engagement Plan not required by the EIA proclamation. Establishing GRM to address public concerns is also not required by the EIA proclamation.	The application of ESS 10 requirement for SEP is advisable to continue engagement of stakeholders during project implementation and beyond when appropriate.

## 4 Environmental and Social Baseline

Ethiopia is characterized by a complex and varied topography with large spatial variations in terrain, rainfall, and climate. The country can generally be distinguished in five topographic areas: the Western Highlands; the Western Lowlands; the Eastern Highlands; the Eastern Lowlands; and the Rift Valley, an active continental rift that runs through the country from southwest to northeast. Using 1500-m elevation as a crude threshold, the Highlands occupy approximately 35% and the Lowlands 65% of the total land area.

The highlands of Ethiopia are the source of major perennial rivers. Ethiopia has twelve major river basins, of which three are considered dry (the Ogaden, Aysaha, and Danakil). The northern and central highlands drain westward into Ethiopia's most extensive river system, the Abay, or the Blue Nile, into the Tekeze River, a tributary of the main Nile, and the Baro River, a branch of the White Nile. The eastern highlands drain into the Awash, WabiShebele and Genale-Dawa Rivers. The Awash River never reaches the sea but is ultimately absorbed into a succession of lakes and marshes near the Djibouti border. The WabiShebele and Genale-Dawa Rivers that eventually cross the eastern lowlands, moderate the desert ecology. In the south, the Omo River drains into Lake Turkana, and several streams flow into the other Rift Valley lakes. In the southeast, the mountains of Arsi, Bale, and Sidamo drain toward Somalia and the Indian Ocean, but only the Genale or Juba River permanently flows into the sea. Apart from the larger rivers, there are few perennial streams below 1,000 meters. The Awash River is the most intensively developed river basin in Ethiopia, with a high concentration of economic value and assets, including the majority of irrigated agriculture and related industries, such as sugar cane production.

Ethiopia is highly exposed to extreme weather and climate-related events. Prone to multiple natural hazards, including droughts, floods, and landslides as well as earthquakes, volcanoes, and wildfires. Flooding poses a threat to large parts of the country. Lowland, highland and urban areas alike are affected by recurrent flooding, especially during and following intense and sustained rainfalls in the June-August rainy season. Modelled impacts show that annually about 250,000 people, 200 education and health facilities and 550 kilometers of roads are exposed to flooding.

Following the complex physiographic setup and geological formation Ethiopia possesses three broadly classified drainage systems namely Western, South-eastern and Rift Valley Drainage Systems. As can be seen on the map below Western and the South-eastern drainage systems are separated by the Rift Valley system.

**Figure 2: River Basins of Ethiopia**



### **The Western Drainage Systems**

The Western Drainage Systems are the largest of all drainage systems draining 40 percent of the total area of the country and carry 60 percent of the annual water flow. Most of the catchment area extends westward sloping to the western highlands and western lowlands. This drainage system comprises four major river basins namely the Tekeze, Abay, Baro-Akobo, Omo Gibe. Unlike other river basins in the system, the Omo-Gibe flows southward and Abay, Tekeze and Baro flow westward ultimately joining the Nile which finally ends at Mediterranean Sea.

The largest river both in volumetric discharge and coverage in the western drainage systems is the Abay. Abay river basin covers an area of 199,812 km<sup>2</sup>, covering parts of Amhara, Oromia and Benishangul-Gumuz regional states. It carries 65 percent of the annual water flow of the region. Abay rises from Lake Tana flows about 1,450 kilometres and joins the White Nile in Khartoum, Sudan to form the Nile River. More than 60 streams drain into Abay River within elevation ranging between 500 and 4261 meters above sea level. Abay flows eastward, turns 180° to make a large bend and after cutting an impressive deep gorge emerges out in the west. Similarly, the Tekeze and its tributaries, carrying 12 percent of the annual water flow of the region draining 82,350 Km<sup>2</sup> of land surface within elevation ranging between 536 and 4517 meters above sea level. Erosion in the basin resulted in large tablelands, plateau blocks and isolated mountain groups. The basin has two main tributaries (Angereb and Goang) which rise in the central highlands of Ethiopia. Tekeze River total mean annual flow is estimated to be 8.2 Billion meter cube (BMC).

The Baro-Akobo and Omo Gibe rivers drain the wettest highlands in the south and southwestern Ethiopia. They carry 17 percent and 6 percent of the annual water flow respectively. The Omo-

Gibe River Basin drains an area of 79,000 km<sup>2</sup> with an estimated mean annual flow of 16.6BMC. In the lower course, the Baro River flows across an extensive marshy land. Baro Akobo River basin has an area of 75,912 km<sup>2</sup>, covering parts of the Benishangul-Gumuz, Gambella, Oromia, and SNNPR. The total mean annual flow from the river basin is estimated to be 23.6 BMC. The Omo Gibe River finally empties in to the Chew-Bahir at the mouth of Lake Turkana

### **The South-eastern Drainage Systems**

Nearly the entire physiographic region of southeastern part of Ethiopia is drained by the southeastern drainage systems. The basin which is mainly drained by Wabishebele and Genale, slopes south-eastwards across large water deficient plains. Major highlands of this basin include plateaus of Arsi, Bale, Sidama and Harerghe. Wabshebele and Ghenale rivers cross the border into Somalia, carrying 25 percent of the annual water flow of Ethiopia. Ghenale River basin has an area of 171,042 km<sup>2</sup>, covering parts of Oromia, SNNPR, and Somali regions. The basin mean annual flow is estimated to be 5.8 BMC within elevation drop ranging between 171 and 4385 meters above sea level.

### **The Rift Valley Drainage System**

The Rift Valley drainage system is an area of small amount of rainfall, high evaporation and small catchment area. The size of the drainage area is restricted by the outward sloping highlands, which starts right from the edge of the escarpment. The Rift Valley drainage system is therefore left with the slopes of the escarpment and the Rift Valley floor itself as the catchment area.

The only major river basin in this drainage system is Awash. Awash River basin has a catchment area of 114,123 km<sup>2</sup> and has an average annual discharge of 4.9 billion cubic meters. Awash River originates from Shewa plateau in central highlands of Ethiopia, and flows for about 1250 kms in north easterly direction. It covers parts of the Amhara, Oromia, Afar, Somali, Dire Dawa, and Addis Ababa City Administration. Awash is the most utilized river in the country.

In the Rift Valley drainage systems, there is no one general flow direction, as the streams flow in all directions. Following the Rift Valley orientation, the Awash flows in a northeast direction and finally ends up in small lakes and marshy area the largest of which is Lake Abe on the Ethio-Djibouti border.

The Afar drainage sub-basin has practically no stream flow. It is an area of little rain, very high temperature and very high evaporation. Lake Afrera and Asale are the only main surface waters in the basins which are not the result of any meaningful surface flow. Their formation is related to tectonic activities.

The Southern part of the Rift Valley sub-basin is characterized by a number of lakes and small streams. It is also described as lakes region. The lakes occupy fault depression. There are small

streams that drain down from the nearby mountain slopes which supply water to the lakes. For example, Meki and Katar Rivers flow into Ziway; Bilate into Abaya; and Segen into Chew Bahir. Likewise, some of these lakes are interconnected. Lakes Ziway and Langano drain into Lake Abijata through the small streams of Bulbula and Horocolo respectively.

Among the Basins in Ethiopia Awash River Basin, Rift valley Lakes Basin and Omo Gibe River Basin believed to have serious flood risks have been identified as the project areas of this project. In this section the status of the biophysical and socio-economic environment of three basins are assessed.

### **Over view of droughts and other Natural Disasters in the Project basins**

#### **Drought, Environmental and Socio-economic threats in the Proposed Project Basins**

##### **(a) Awash River Basin**

Drought in Awash River basin is basically a meteorological drought, lack of enough rainfall, followed by hydrologic drought, and manifested as loss of stream flows and storage. In this case climate has the major influence on the occurrence of drought and flood in the basin.

Generally, there are just two types of flood in the basin namely, the floods that caused by extreme excess of precipitation on the catchment that contributed to the flood in the main and tributaries of the river, and floods owing to unexpected release of an excess amount of water from storage or dam. The flood in Awash River basin is due to the excess precipitation that occurred in the highland of the basin, and finally generates high flood on the downstream part of the basin. The basin originates from the highlands at above 3000masl receiving 2000mm of rainfall. The land use of the basin is characterized by extensive land use for agriculture, combined with urbanization and industrialization, is aggravating the generation of runoff. The basin is currently inhabited by 18 million people and supports 34 million livestock population putting immense pressure on the natural resource base. These factors contribute to severe land degradation, erosion, flooding and sedimentation. For example, the flood episode at Dire Dawa in 2006 that caused loss of lives and properties, and the frequent flood hazards at Amibara, Gewane, Logiya and Asaita are some of flood events in the basin.

Drought, as a recurrent phenomenon in the Awash Basin, had the most devastating effects in 1974 and 1984 that caused loss of human and livestock population. Droughts are caused due to the absence of rain, & thus grow & retreat in severity at rates measured by normal precipitation in an area. In general, there are four categories of drought, namely: meteorological, agricultural, hydrological & social-economic drought. Drought in Awash River basin is basically a meteorological drought, lack of enough rainfall, followed by hydrologic drought, and manifested as loss of stream flows and storage. In this case climate has the major influence on the occurrence of drought and flood in the basin. This is also reflected in the rise of temperature causing high evapotranspiration and extreme events of erratic and high rainfall.

With the increase in population, economic development activities, and the change in geomorphology of the river basin for instance, anthropogenic, urbanization, industrialization, large



scale irrigation expansions and the natural topography have significance pressure on the natural environment within Awash River Basin. This has been a tendency to occupy the floodplains, often resulting in serious flood damages and drought hazard which in turn for the loss of physical properties and lives over the years.

The current scenario indicates that flood and drought are the recurrent common phenomena of Awash Basin, with devastating effect on environmental, social and economic loss. The most noticeable factors that cause these hydrologic risks are; deforestation, soil degradation, unmanageable urbanization and climate change etc. Frequently, the flood hazard occurs in the basin during summer season specifically June-September, following heavy rains in the eastern highland and escarpment areas of north Shewa, Wollo, Western Hararge and Upstream of Koka Reservoir, draining eastwards that increase the water level of the Awash River in a short period of time. Most of the time the high and very high flood risks are in the downstream part of the basin, low-lying flat areas of the Awash River basin that are Amibara, Gewane and Logiya Weredas.

The current situation indicates that drought occurs every two years in the area (Desalegn et al, 2006). Further, Desalegn et al, (2010) after analysis of drought in Awash River Basin, it was indicated that droughts occur most frequently around two sites in the Middle Awash Basin (Hurso and Mieso areas), followed by Metehara, Nazareth and Holeta areas in the Upper Awash and Dubti, Mille and Cheffa areas in the Lower Basin. However, on 3- and 6-month time scales, areas most frequently hit by droughts of mild and above mild categories are those located in the Middle and Lower Awash Basin. The same research shows that hydrologic drought events of all severity level are observed in lower part of the basin, at Adaitu and Dubti stations.

#### **(b) Rift Valley Lakes Basin**

##### **Treats and Concerns on the rift Valley lakes Basin**

The Rift Valley Lakes Basin (RVLB), which forms the southern part of the Main Ethiopian Rift, covers an area of about 53,000 km<sup>2</sup> and it extends south from the upper catchments of the Awash Basin to the Kenyan border and to the extreme south of Chew Bahir. This Basin lays both in the Oromiya and SNNP Regional States. The major threats of Rift Valley Lakes Basin are over population and overgrazing. Industrialization and urbanization, deforestation, siltation, agricultural expansion, investment, pollution, climate change, land use and land cover change. Population pressure during the last three decades has resulted in the conversion of natural vegetation, overgrazing of natural grasslands, removal of natural shrub for firewood and clearing of forests for construction material

The Rift Valley Lakes Basin is one of the most environmentally vulnerable areas of Ethiopia. Most of the lowland in the basin is arid or semiarid, and droughts occur frequently. The area consists of a chain of lakes, streams and wetlands with unique hydrological and ecological characteristics. Owing to the fragility of the environment and competing claims for land and water resources, the area has been experiencing serious environmental deterioration and socioeconomic challenges which is also growing threat to the existence of the local community. The competing claims for land and water resources in the Rift Valley lakes Basin will create the following s environmental and social treats on the community and the ecosystem of the lakes .

#### **(a) Lake Abiyata**

The level of Lake Abiyata fluctuates according to the precipitation trends in the highlands. However, the recent drastic decline in its level and the increase in salinity coincide with the time of large-scale water abstraction. The current and future uncontrolled water abstraction will have obvious environmental repercussions, which are thought to bring serious consequences to the lacustrine environment in the predictable future. Changes in Lake Abiyata should be perceived jointly with the abstraction of water for irrigation around Lake Ziway.

The direct pumping of water from the Lake Abiyata for commercial exploitation of soda ash by evaporation of brine also impacts on the lake level of the lake. Currently, there is no fish and fishery activity, which could be due to the declined water level of the lake, high salinity and associated effects.

#### **(b) Ziway Lake**

Major concerns have occurred in Lake Ziway is due to the establishment and expansion of floriculture industries and other investment projects discharging pollutants into the lake water. High population growth and consequent expansion of settlements and cultivated lands at the expense of other land use types such as forestlands, woodlands, ; high applications of agrochemical inputs is impacting the lake ecosystem. Excessive exploitation of resources can also lead in some cases to a direct collapse of the wetland around Ziway Lake. Excessive water withdrawal was believed to be a major cause for the collapse of the lake even though siltation also has played its part.

#### **(c) Lake langano**

The surface area of lake Langano is reduced by 0.84% from its 1985's size . Such kind of drastic change in surface area of lakes may have long lasting negative consequences. The reduction in surface area of Lake Langano will result in negative impact on ecosystems, biodiversity and livelihood of the community living around the lake. The absence of considerable water abstraction and large groundwater flow from springs are considered to be the factors against its relative stability of lake level variability. The area in general is located in a dry and water scarce zone. Tourism is a high-profile industry at this lake and its effects are not clearly known. Without a control system in place, increasing resorts and growing numbers of tourists can have negative effects in the long term.

#### **(d) Lake Shalla**

The water level and surface area of the Lake Shalla is decreasing from time to time due to human encroachment, cattle grazing, uncontrolled water abstraction and other anthropogenic activities. Area of Lake Shalla is reduced by 1.48% from its area of 1985. The reduction in surface area of the lake Shalla will create negative impact on ecosystems, biodiversity and livelihood of the community living around the lake. The water level and surface area of the lake and the status of the park are deteriorating may be due to human encroachment, grazing by cattle, uncontrolled water abstraction and other anthropogenic activities.

#### **(c) Omo Ghibe River Basin (OGRB)**

Extreme and severe drought events were observed in 1988, 2000, and 2009 in Omo Ghibe Basin.

In the basin, prolonged drought events were recorded from 2000 to 2015. The statistically significant increasing trend of seasonal and annual drought events was observed in all basin parts. However, more drought events distribution was exhibited in the south than in the north and central parts. The Sawla station showed a higher drought frequency, ranging from 18.18 to 20.36%. Maximum intensity and peak drought events were observed in this sub-basin.

Substantial warming and erratic rainfall have made OGRB vulnerable to drought events. The intensification of droughts in the basin has also been recorded in humid parts of the basin which has a significant adverse effect on the water availability of down streams. This indicates that the observed drought intensity can increase the water deficit and other natural resources degradation.

## **4.1 Awash River Basin**

### ***4.1.1 Biophysical Environment***

#### ***Location***

Awash Basin is located between 7° 53'42'' to 12° 07'20'' North and 37° 56'56'' to 43° 17'4'' East. The basin is bordered by Danakil, Abbay, Omo Gibe, Rift-Valley lakes and Wabi-Shebele basins and the Republic of Djibouti. The river originates near Ginchi in the central highlands of Ethiopia, and flows north east through the northern section of the Rift Valley to eventually discharging into Lake Abbe near Djibouti boarder after traveling a distance of about 1200km. The total catchment area of the basin is about 116,000 square kilometers.

#### ***Climate***

The climate of the Awash River Basin varies from humid subtropical over central Ethiopia to arid over the Afar lowlands. The climate of the Awash River Basin is mostly influenced by the movement of the inter-tropical convergence zone (ITCZ). During its movement northwards in March/April and its retreat southwards, ITCZ creates two rainy seasons, a shorter one around March ('Belg'), and a longer one between June and September ('Kiremt'). The rain-season tends to be bimodal towards eastern Ethiopia and almost uni-modal towards western Ethiopia. The time between October and March is a dry season, called 'Bega'. Semi-arid to arid conditions prevail in the basin. In contrast, the highlands partly receive more than 1600 mm of rainfall in ca. six months per year.

Future climate projections show an increase in water deficiency in all seasons and for parts of the basin, due to a projected increase in temperature and decrease in precipitation. This decrease in water availability will increase water stress in the basin, further threatening water security for different sectors.

Generally, plateaus between 3000m and 2,500m receive between 1,400 and 1,800 mm per year and regions with altitudes ranges from 1600 to 2500m receive between 1 000 and 400mm per year. The rainfall distribution is bimodal with a main rainy season from June to September and the short rainy period in March and April. Although the rainfall intensity is high the potential evapo-transpiration (PET) in the Upper Valley is higher. For instance, evapo-transpiration at Koka is 1810 mm, almost twice of the annual rainfall.

### ***Topography***

Awash river basin is located in central Ethiopia and flows through five regional states (Oromia, Afar, Amhara, Somali, SNNP) and two administrative towns (Dire Dawa and Addis Ababa). Awash River Basin rises at an elevation of 3000masl over the central highland of Ethiopia about 150 km west of Addis Ababa and has a drainage area of 0.11 million sq. km. The river flows generally north eastwards along the Rift Valley and terminates in Lake Abe at an elevation of 250 masl near the Djibouti border. The altitude of Upper Valley of the Awash River is about 3 km. and rises on the high plateau to the west of Addis Ababa. There are large elevation drops from western and northern part of the Upper Awash River Basin to its southern side. The total drop in elevation is above 1400m in a 100km distance from north to south. The Awash River first flows to east draining the Becho plains and then joined by a number of tributaries before it enters to Lake Koka. After Lake Koka, the river empties into a chain of interconnected lakes and ends in Lake Abbe on the border with Djibouti.

### ***Soils***

Soil salinity and alkalinity problems are commonly found in the arid and semi-arid regions of the Awash River Basin due to insufficient annual rainfall to leach down accumulated salts from the plants root zone. Salt affected soils have been reported to occur at most parts of lower Awash Basin. The pH values at the Upper Awash Basin ranged from normal, slightly and moderately alkaline clearly indicating the accumulation of bicarbonate and sodium ions in the soils of the area. However, in the Middle Awash it ranged from slightly, moderately and highly alkaline, and it reduced again to normal and slightly alkaline range in lower awash areas. Similar trends have been observed in regard to soil salinity and sodicity. Generally, the extent and distribution of soil salinity problem is varied along the river basin. The problem is serious and abundant areas of irrigated farms are being out of production in middle awash areas as compared to upper and lower awash areas.

### ***Surface water and Groundwaters***

Awash is the major river in the basin. The Awash River first flows to east draining the Becho plains and then joined by a number of tributaries before it enters Lake Koka. The major tributaries upstream of the Koka reservoir include Kebena, Great and Little Akaki and Mojo Rivers. Other tributaries of the Awash include Logiya, Mille, Borkana, Ataye, Hawadi, Kabenna and Durkham Rivers. Its course is entirely contained within the boundaries of Ethiopia and empties into a chain

of interconnected lakes and ends in Lake Abbe on the border with Djibouti.

The Awash basin is rich in water resources, but they are variable, uncertain and becoming increasingly scarce as the local economy rapidly develops. However, the region faces variability and uncertainty over water availability and is highly vulnerable to extreme events. This raises the possibility of water scarcity at particular points in time and space as well as significant adverse impacts from flooding and drought. In particular, the basin faces significant seasonal and geographical variation in water availability that is not currently regulated by infrastructure, with aggregate surface water availability during the dry season around 28 per cent of the level during rainy season and a much more arid climate in the downstream, lowland areas in the east of the Basin

The dynamics of water quality in the Awash River basin are complex as the chemistry derives from the geology and soils of the river basin as well as pollutants entering the river from diffuse agricultural sources as well as point sources from industry or domestic waste. Aquifers in and around the city of Addis Ababa are showing signs of increasing contamination by chemicals, including nitrate, and there is an increasing concentration of heavy metal pollution, coliform and pathogen pollution in the water of Aba Samuel reservoir and its tributaries.

Groundwater potential in the Upper Awash Basin moves from North-North West to Southwest in the basin. This contributes about 330 Mm<sup>3</sup> net annual groundwater to the Upper Awash River. This illuminates the importance of the groundwater system in maintaining the flow of the Awash River and reservoirs storage.

### ***Flora***

Most of the Awash Basin is part of the Ethiopian montane forests ecosystem. At high altitudes the Ethiopian montane grasslands and woodlands and Ethiopian montane moorlands predominate. The Somali *Acacia-Commiphora* bush lands and thickets eco-region occupies low elevations of the basin. The basin's vegetation has a strong anthropogenic impact. All over the upper and central Awash Basin, remains of different savanna types are still clearly visible. They range from thorn savannas in the lower basin, bush, grass and open savannas above 800 m and woody savannas on the escarpments and the highlands. Forestry hardly exists inside the Awash River Basin, with a few exceptions of small eucalyptus plantations. Outside of Awash National Park the open and woody savannas have been almost replaced with crops. This especially accounts for all escarpment terraces. The scattered tree cover remained similar to the primary state of the savannas, while the grass layer has been replaced by crops. Only highest altitudes still show connected woodlands. Partly reforestation was carried out on not cultivable altitudes with secondary coniferous forests.

### ***Fauna***

The Lower Awash Valley is one of the last wildlife preserves for the African wild ass (*Equus*

*africanus*, critically endangered). The mammal is no more in Yangudi Rassa National Park, but still found in the adjacent Mile-Serdo Wildlife Reserve which is a protected area. Other large animals in the basin include East African oryx (*Oryx beisa*, endangered), Soemmerring's gazelle (*Nanger soemmerringii*, vulnerable), Dorcas gazelle (*Gazella Dorcas*, vulnerable), gerenuk (*Litocranius walleri*, near threatened) and Grevy's zebra (*Equus grevyi*, endangered).

### ***Sensitive habitats***

**Awash National Park:** Awash National Park, which includes the Alledoghi Wildlife Reserve, is located 225 kilometers east of Addis Ababa, in central-eastern Ethiopia, north-east of Oromia, and bordered in the south by the Awash River, and in the north by parts of the Afar Region and the Danakil. It covers just over 756 square kilometers. The park is fed by the Awash River, which begins in the highlands around Addis and finishes some 1,200 kilometers in Lake Abbe. The park has striking features such as for example the Awash River Gorge's waterfalls situated in the south. Wildlife in the park includes the Beisa Oryx (*Oryx beisa*, endangered), Soemmerring's Gazelle (*Nanger soemmerringii*, vulnerable), Anubis baboon (*Papio Anubis*, least concern) and Hamadryas baboon (*Papio hamadryas*, least concern), Black-backed jackal (*Lupulella mesomelas*, least concern), waterbuck (*Kobus ellipsiprymnus*, least concern), Senegal Galago (*Galago senegalensis*, least concern), African Wildcat (*Felis lybica*, least concern), Crested Porcupine (*Hystrix cristata*, least concern), and Scrub Hares (*Lepus saxatilis*, least concern). Lion (*Panthera leo*, vulnerable) is also occasionally sighted. This park is also rich in birds with over 350 recorded species.

**Yangudi Rassa National Park:** Yangudi Rassa National Park is located in the Afar Region, It has 4730 square kilometers of territory that includes Mount Yangudi with altitudes from 400 to 1459 meters above sea level. Sandy semi-desert and wooded grassland cover the majority of the park's area. Large animals native to the park include gerenuk (*Litocranius walleri*, near threatened), Soemmerring's gazelle (*Nanger soemmerringii*, vulnerable), East African oryx (*Oryx beisa*, endangered), Lion (*Panthera leo*, vulnerable), Grevy's zebra (*Equus grevyi*, endangered), Cheetah (*Acinonyx jubatus*, vulnerable) and Leopard (*Panthera pardus*, vulnerable). Bird species of interest include lesser flamingo (*Phoeniconaias minor*, near threatened), pale rockfinch (*Carpospiza brachydactyla*, least concern) and Arabian bustard (*Ardeotis arabs*, near threatened).

Other notable protected areas in the Awash basin include (i) Mile Serdo Wildlife Reserve, (ii) Alledoghi Wildlife Reserve, and (iii) Gewane Wildlife Reserve.

Although the exact locations of the priority sub-projects are not known at this stage, some of the

sub-projects may fall *close* to these and other protected areas in Upper, Middle and Lower Awash basin.

**Figure 3: Some of the Protected Areas in Awash River Basin**



### ***Archaeological sites***

The Awash Valley especially the Middle Awash, is internationally famous for its high density of hominin fossils, offering unparalleled insight into the early evolution of humans. For its paleontological and anthropological importance, the lower valley of the Awash was inscribed on the UNESCO World Heritage List in 1980. Humans have lived in the valley of the Awash almost since the beginning of the species and numerous pre-human hominid remains have been found in the Middle Awash. The remains found in the Awash Valley dated from the late Miocene, Pliocene, and early Pleistocene (roughly 5.6-2.5 million years ago), and include fossils of many Australopithecines, including "Lucy", the most famous Australopithecus. Other extinct hominids discovered at the site include *Homo erectus* and *Ardipithecus*.

### ***4.1.2 Socioeconomic Baseline***

#### ***Population and Economy***

The Awash Basin is one of the most populated basins in the country. The river basin spans five national regional states, and two city administrations, namely Oromia, Amhara, South Nations and Nationalities People's, Afar, and Somalia Regional States, and Addis Ababa and Dire Dawa Cities

administrations. The Awash Basin Authority estimated the population of the river basin to be about 18.3 million in 2017. Several urban centres are located within the basin. Major settlement centres include Addis Ababa, Bishoftu, Mojo, Dukem, Adama, Semera, Dire Dawa, Dessie and Kombolcha (Awash Basin Authority 2017).

Industrial activity in the Awash Basin is comparatively more widespread. Particularly the Upper Awash River Basin is home to various industries including tanneries, steel, food and beverages, plastics, chemicals, pharmaceuticals and papers industries. According to the Awash River Basin Strategic Plan Main Report, more than 65% of industrial firms in the country are located in the Awash Basin mainly along the Addis Ababa - Adama, Addis Ababa - Holeta and Addis Ababa-Sebata industrial development corridor. In addition, Dire Dawa and Kombolcha are among the main industrial zones of the country which are also found in the basin. Moreover, large scale mechanized state and private irrigated farms such as Wonji-Shoa, Metahara, Tibila, Fentale, Upper Awash Agro Industry, Kesseme, Amibara, Gewane and Tendaho are found in this basin. A wide variety of crops are cultivated ranging from cereals, vegetables, flowers, cotton to perennial fruit orchards and sugarcane. Currently, there is a shift in crop preference following the Government's interest in sugar production. The dominantly cotton cultivating middle and lower valley areas have been transformed to sugarcane production (Awash Basin Authority 2017).

Hydropower generation is an important activity in the Basin. The following three dams are in operation in the basin: Aba Samuel (1.5 GWh/ year), Koka (110 GWh/year), Awash II (165 GWh/year), and Awash III (165G Wh/year). In the coming years five additional dams are proposed to be built for hydropower generation and irrigation development in the basin (Tufa 2021).

### ***Poverty and Vulnerability***

The Awash River Basin Strategic Plan identified flood & drought are the most common risks against vulnerable populations. There are two types of flood in general, namely, the floods that caused by extreme excess of precipitation on the catchment that contributed to the flood in the main and tributaries of the river, and floods owing to unexpected release of an excess amount of water from storage or dam. The flood in Awash River basin is due to the excess precipitation that occurred in the highland of the basin, and finally generates high flood on the downstream part of the basin. The basin originates from the highlands at above 3000masl receiving 2000mm of rainfall. The land use of the basin is characterized by extensive land use for agriculture, combined with urbanization and industrialization, is aggravating the generation of runoff. The basin is currently inhabited by 18 million people (growing at 2.9%) and supports 34 million livestock population putting immense pressure on the natural resource base. These factors contribute to severe land degradation, erosion, flooding and sedimentation. For example, the flood episode at Dire Dawa in 2006 that caused loss of lives and properties, and the frequent flood hazards at Amibara, Gewane, Logiya and Asaita are some of flood events in the basin.



Drought, as a recurrent phenomenon in the Awash Basin, had the most devastating effects in 1974 and 1984 that caused loss of human and livestock population. Droughts are caused due to the absence of rain, & thus grow & retreat in severity at rates measured by normal precipitation in an area. In general, there are four categories of drought, namely: meteorological, agricultural, hydrological & social-economic drought. Drought in Awash River basin is basically a meteorological drought, lack of enough rainfall, followed by hydrologic drought, and manifested as loss of stream flows and storage. In this case climate has the major influence on the occurrence of drought and flood in the basin. This is also reflected in the rise of temperature causing high evapo-transpiration and extreme events of erratic and high rainfall.

Flood and drought are the recurrent common phenomena of Awash Basin, with devastating effect on environmental, social and economic loss. The most noticeable factors that cause these hydrologic risks are; deforestation, soil degradation, unmanageable urbanization and climate change etc. Frequently, the flood hazard is occurring in the basin during summer season specifically June-September, following heavy rains in the eastern highland and escarpment areas of north Shewa, Wollo, Western Hararge and Upstream of Koka Reservoir, draining to Eastwards that increase the water level of the Awash River in a short period of time. Most of the time the high and very high flood risks are in the downstream part of the basin, low-lying flat areas of the Awash River basin that are Amibara, Gewane and Logiya *Woredas*. The coverage of summary flood hazard levels and coverage in Awash depicts nearly 32% (38,000 km<sup>2</sup>) of the basin area is highly to very highly hazard zone, while only about 15 % of the basin area is low hazard zone, leaving the rest in the moderate region.

The poverty situation in the Afar region has seen some improvement. According to a UNICEF (2019) report, since 1999-/000, Afar has seen a decline in monetary poverty: a 32 percent decline between 2000 and 2016. In recent years, the decline in poverty has been particularly strong. The headcount poverty rate in 2015/2016 was 24 percent and was equal to the national average. The decline in food poverty has not been as strong and was 28 percent; the third highest of all regions. As elsewhere in Ethiopia, there is a large difference in monetary poverty between rural and urban areas, 27 percent versus 11 percent, respectively. The same applies to food poverty; there is a 20-percentage point difference between the rural and urban food-poor people.

### ***Land Use and Livelihood***

The Feasibility Study and Detail Design of Awash River Flood Protection and Control Project (2017) report focuses on the Afar region wherein most of the river basin lies. About 90% of the regional populations in Afar are their livelihood base on livestock rearing with limited irrigation agriculture along the river basins and low-lying riverine areas. The Afar keeps multiple species and multi-purpose stock. They rear multiple species including cattle, camels, goats, sheep and donkeys. The proportion of the different species varies with the vegetation cover of the Region. In parts of the Region, in the escarpment and around the perennial rivers where the grazing resource

is relatively good, cattle and sheep are the dominant types of livestock. In the drier part of the Region camel and goats make the prominent parts of the herd composition with mainly camels in the extreme arid areas.

However, in the past decades the Afar subsistence pastoral system has been under pressure due to climate change and other factors. The Afar pastoralists face various problems that include recurrent drought and famine; flash floods; disease outbreaks; bush encroachment; loss of livestock, and impoverishment; pastoral conflict; population growth, etc.

About 14.8% of the total land area of the region is covered by grassland; 31.5 % shrub land, 1.7% woodland and 0.11% forest land. Whereas water bodies and wet land together account for 1.37% of the total land, the vast area of the region 49.6% is an exposed soil, sand or rock. Only 7% of the region's land is also estimated to be cultivable land. The region is one of the least developed regions in the country having 56% of the inhabitants living below the line for absolute poverty.

Elsewhere in the region, land use is characterized by extensive land use for agriculture, combined with urbanization and industrialization, is aggravating the generation of runoff.

Among the Afar pastoralists, smallholding crop-based livelihoods are gradually growing, often determined by the availability of irrigation. Currently, much of the rangeland that had been used for dry season grazing along major riverbanks has been transformed into crop production. The growth of crop production is driven mainly by the growth of private investment, increasing immigration from other regions and existing state farms. The dominant crop being cultivated by subsistence producers is maize, followed by horticultural crops including onion, tomato and forage. In dry seasons, crop residues are used as fodder for livestock. Maize and vegetables (mainly onion, tomato and pepper) are grown in sizeable plots along the Awash River and its tributaries. Rain-fed agriculture is also practiced in the Middle Awash like in Dulecha on a very small proportion of the farms, although rainfall alone is not sufficient to sustain a full agricultural season. Land close to irrigation canals is highly valued due to the steady supply of water and relatively fertile soils (FAO and Tufts University, 2019).

Therefore, vegetable cultivation with irrigation is a new and potentially profitable source of income for the Afar both in middle valley and the lower plains. It is a capital-intensive but lucrative business that can be undertaken at commercial as well as smallholder levels. Vegetables create higher net incomes than cereal production and contribute to the overall growth of markets and agribusinesses in the local economy. Women have benefitted the most from the increasing importance of horticulture, playing a much more significant role in horticultural crop production compared to staple crops.

Small-scale fishing and fish marketing is making significant contributions to local economies

through income and employment multiplier effects in the Afar Region. Fish is an important source of direct food security and can generate alternative livelihoods for thousands of people through incomes derived from harvesting, processing and trading. Small-scale fishing activities are taking place particularly in the Lower Valley like Tendaho and Dubuti, with access to fishery resources creating an estimated 5–8 percent of the total employment in the locality. The Afar Region has about eight perennial rivers and numerous seasonal rivers that flow in different basins, in addition to six lakes: Asahle, Dalol, Afdera, Abe, Gemeri and Yardi Lakes. There are no data available on the estimated fish resources, but according to the local community, and *woreda* and regional officers, Afar's lakes and the dams have huge potential as a fishery resource and alternative livelihood prospect. At present, however, there are very few commercializing activities, and the role of fishing in household livelihoods is still insignificant. The mode of fish production in the study areas is mainly through employing migrant fishermen to look after the fishing activities. The local fishery cooperative collects the income from sales, and the fishermen receive a wage based on the amount of fish caught and the sale price. The income is shared among the cooperative ((FAO and Tufts University, 2019).

The Karrayyu are the other important pastoral group in the Awash River Basin, and they are Oromo-speaking transhumant pastoralists inhabiting the Metehara Plain and Mount Fentale area of Fentale *Woreda* in the Middle Valley of the Awash River Basin. Apart from livestock herding, the Karrayyu in certain village communities have also started practicing irrigated cultivation. This is the expanding form of cultivation entirely dependent on the Awash River and surplus flow of irrigation water from the Metehara Sugar Estate and Nura Era Farm. The Karrayyu have been practicing irrigated cultivation for the last forty years, and the most important reason behind their resort to crop cultivation is the increasing amount of pressure on land which puts their pastoral mode of subsistence in crisis. Like their Afar neighbors, the alienation of a great part of their pastoral land for use by commercial farms and the Awash National Park contributed to their embarking on cultivation as a coping mechanism (Ayalew, 2001).

### ***Gender and SEA/SH***

The Feasibility Study and Detail Design of Awash River Flood Protection and Control Project (2017) report outlines several gender issues in the Afar region. According to the report Afar women are burdened with both productive and reproductive roles. They are directly responsible for the construction of the mobile house known as an "ari" as well as undertaking routine household tasks such as milking, fetching water and collecting fuel wood. Women are not eligible to be elected to the *kebele* council. In contrast, men's responsibilities are confined to livestock herding (including where and when to migrate in search of grass and water), participating in clan affairs as well as neighborhood and *kebele* leadership. Afar boys usually look after cattle around the homesteads. The report states that generally, the situation of women in the study areas noted that poverty and economic dependency on men is a major problem in the realization of women's empowerment.

According to UNICEF (2019a), in Afar region 17 per cent of women (aged 15-49) decided themselves on their first marriage (the second lowest rate in the country) while 82 per cent of women stated that their parents made the decision for their first marriage. The rate of women who stopped attending school after marriage is 50 per cent (aged 15-49). When asked what the main reason was for discontinuing school, 49 per cent of women cited that they were too busy with family life. Another reason put forward by women for discontinuing school was that their husbands refused to let them continue (32 per cent). Almost one in four Afar girls (aged 15-19) have begun childbearing, which is the highest rate in the country. This high rate corresponds with the low rate of married Afar women using modern contraceptive methods (12 per cent), second only to Somali. According to the Afar tradition of *Adda*, women should follow what is decided by men with submission, regardless of whether it affects their well-being positively or negatively.

### ***Access to Social Services***

#### ***Road and communication***

The Feasibility Study and Detail Design of Awash River Flood Protection and Control Project (2017) report outlines the state of public services in the Afar region. According to the report, all *Woreda* have one main asphalt road connecting the *Woreda* capital with the regional capital, Semera except Dulecha *Woreda*. The majority of project rural *Kebele* have dry weather road which connects with the *Woreda* capital. *Woreda* capitals in the region have digital telephone services and mobile telephone coverage is available in most rural *kebeles*.

#### ***Water and Sanitation***

The quantity and distribution of water supply schemes in Afar region are not sufficient to meet the demands of the population (and livestock). This challenge is exacerbated by continuous climatic shocks that lead to drought. The percentage of households using improved drinking water sources is the second lowest in Ethiopia. According to the 2016 EDHS, 57 per cent of households use improved drinking water sources in Afar. This is under the national average of 65 per cent. On the positive side, the rate increased by 13 percentage points between 2014 and 2016, which denotes notable progress. There are multiple challenges in Afar region related to water supply, including that the region receives less rainfall than other regions, has more complex hydrogeology, weaker regional and *woreda* administrations, and is sparsely populated by people practicing agro-pastoralist and pastoralist livelihoods. In Afar, the median time to fetch water is two hours, and the burden falls to women in 80 per cent of households. For more than half of the households – 55 per cent compared to the national average of 32 per cent – the closest water source is more than 30 minutes away (UNICEF 2019)

#### ***Health***

Afar region has one of the lowest health services coverages in the country. According to a recent

study (Ergeta 2019) study, coverage of various health services was very low. By 2015, coverage stood at: family planning (11.6%), pregnancy care (18.4%), immunization (20.1%) hospital access (4.5%), health worker density (0.4), and access to EM (41.2%).

### ***Cultural Heritage***

Several religious, cultural, and archaeological features are located within the Awash basin. Hora Arsedi, the site of the annual Irrecha celebration at Bishoftu is one such attraction. Further down the basin, the Awash National Park, Yangudi-Rasa Natural Reserve. The Lower Awash Valley paleo-anthropological site is located 300 km northeast of Addis Ababa, in the west of the Afar Depression. It covers an area of around 150 km<sup>2</sup> (ECDSWC 2017).

## **4.2 Rift Valley Lakes Basin**

### ***4.2.1 Biophysical Environment***

#### ***Location***

The Ethiopian Central Rift Valley (CRV) is part of the Great African Rift Valley and is located between 38°00'-39°30' east longitude and 7°00' latitude. The Rift Valley Lakes Basin (RVLB), which forms the southern part of the Main Ethiopian Rift, covers an area of about 53,000 km<sup>2</sup> and extends south from the upper catchments of the Awash Basin to the Kenyan border, to the extreme south of Chew Bahir. This Basin lies both in the Oromiya and SNNP Regional States. It is situated in the administrative regions of Oromiya and the Southern Nations Nationalities and Peoples Region (SNNPR)

#### ***Topography***

The Rift Valley Lakes Basin could be divided into two areas. The northern portion of the area around the lakes of Ziway to Hawassa is almost flat in the valley bed with several mounds of hills in the west. The hills are mostly in the shape of cone or semi-conical crests that leave the traces of past volcanic activity. The eastern terrain shows the stepwise crests bounding the eastern end of the valley. In contrast to the northern geo-morphological conditions, the southern area, from Lake Abay to Chew Bahir, has relatively precipitous terrain. East of Lake Abay-Chamo is characterized by a continuous range of mountains.

#### ***Climate***

The basin is predominantly characterized by a moderate tropical semiarid climate having a bimodal rainfall distributions, with the short rainy season ('Belg ') extending from March to May and the long rainy season ('Kiremt') from June to September and extends up to October in the southernmost parts). The climate is mild, with temperatures usually below 28 °C (82 °F). Most rain falls during the March–June and October–November periods.

### ***Soils***

The geology of the basin is mainly dominated by basalt. This basaltic group comprises of Wonji and Silte volcanics. The Wonji lava field is located at the eastern escarpment of Lake Ziway and the other lava field. Silte is located at the western escarpment. Next to the basalt, alluvial deposits are also scattered around the lake. Soil of Lake Ziway basin is closely related to parent material and degree of weathering. The six dominant soil types in the basin include Andosols, Cambisols, Fluvisols, Leptosols, Luvisols and Vertisol.

### ***Surface Water and Groundwaters***

#### ***Lakes***

The rift valley lakes basin has an annual runoff volume of 5.6 billion m<sup>3</sup> of water and an estimated 0.10 billion m<sup>3</sup> of groundwater potential. Main lakes in the basin include Ziway, Langano, Abiyata, Shalla, Awassa, Abaya, Chomo and Chew Bahir. Based on the lakes's formation the lakes are divided into four Lake Basin groups namely: Ziway-Langano-Abijata-Shalla sub basin, Awassa sub basin, Abaya-Chamo sub-basin and Chew Bahir sub basin. The proportion of area covered by major sub basins are: Ziway-Shalla sub basin covers 27% of the total area of the basin, Hawassa sub basin covers 2%, Abaya-Chamo sub basin comprises of 33% and Chew-Bahir sub basin covers 38% of the whole area of the rift valley lakes basin.

#### ***Rivers***

Most rivers in the rift valley lakes basin are categorized as non-perennial rivers. Even though some large rivers can be classified as perennial rivers, the amount of discharge in the dry season is quite limited. Furthermore, most of the perennial rivers are randomly used by the surrounding community without any rules with activities such as washing, bathing, irrigation, and cattle feeding. Most of the flow rates in the rivers are less than 2m<sup>3</sup> /s in the dry season, except Katar, Bilate, Kulfo and Weyto rivers. The flow rate of these rivers also decreases in the dry season. The total surface water resources of the rift valley lakes basin is estimated at about 5,183 million m<sup>3</sup> /year

#### ***Groundwater***

The rift valley basin covering a total area of 52,739km<sup>2</sup> has an estimated groundwater potential of 0.10BMC representing about 20% of the surface water resource of the basin; the estimated annual direct groundwater recharge of the basin is 1,080 million m<sup>3</sup> /year while the estimated groundwater resource availability of the basin is found to be 53 million m<sup>3</sup> /year.

### ***Flora***

The vegetation types in the basin are categorized into transformed scattered woodland and open grassland. The woodland areas are characterized by *Acacia seyal* (*Vachellia seyal*, least concern), *Acacia tortilis* (*Vachellia tortilis*, least concern), *Acacia senegal* (*Senegalia Senegal*) and *Balanites aegyptiaca* (*Balanites aegyptiaca*, least concern) and the grassland areas are dominated by

*Cynodon dactylon* (*Cynodon dactylon*), *Hypharrhenia* spp (*Hyparrhenia foliosa*). and *Pennisetum plicatulum* (*Pennisetum typhoideum*). The basin is also characterized by Acacia and Euphorbia woodland and riverine vegetation cover of which Acacia woodland is dominant. The dominant tree species include Acacia tortilis, Acacia Senegal, Acacia seyal, Acacia gerrardii (*Acacia gerrardii*), *Dicrostachys cinerea* (*Dichrostachys cinerea*, least concern) and *Balanites aegyptiaca* (*Balanites aegyptiaca*, least concern).

### ***Fauna***

Wild mammal such as Spotted Hyena (*Crocuta crocuta*, least concern) and Egyptian mongoose (*Herpestes ichneumon*, least concern) are found in the basin. Various other animals' species including Warthog (*Phacochoerus africanus*, least concern), Aardvark (*Orycteropus afer*, least concern), Common Jackal (*Canis aureus*), Bat-eared Fox (*Otocyon megalotis*, least concern), Wildcat (*Felis silvestris*, least concern), Abyssinian Hare (*Lepus habessinicus*, least concern) and Crested porcupine (*Hystrix cristata*, least concern) are also observed in the basin.

There are also numerous species of birds. 40 species, which constitute 18 avian families, were recorded in the site and its environs. The dominant bird species in the area include Ruppell's Long-tailed Starling (*Lamprolornis pururopterus*, least concern), Superb Starling (*Lamprolornis superbus*, least concern), White-browed Sparrow weaver (*Plocepasser mahali*, least concern), Northern Masked Weaver (*Ploceus taeniopterus*, least concern), Fan-tailed Raven (*Corvus rhipidurus*, least concern), Emeraldspotted Wood Dove (*Turtur chalcospilos*, least concern), Ring-necked Dove (*Streptopelia capicola*, least concern), Spur-winged Plover (*Vanellus spinosus*, least concern), Gabar Goshawk (*Micronisus gabar*, least concern) and Augur Buzzard (*Buteo augur*, least concern).

### ***Sensitive Habitats***

**Abijatta-Shalla National Park** : it is located in the Oromia Region and the Ethiopian Highlands region, 200 kilometers south of Addis Ababa, and east of the Batu-Shashamane highway with the areas of 887 square kilometers including the Rift Valley lakes of Abijatta and Shalla. The two lakes are separated by three kilometers of hilly land. The altitude of the park ranges from 1540 to 2075 meters, the highest peak being Mount Fike, which is situated between the two lakes. Besides the two lakes, the primary attraction of this national park are a number of hot springs on the northeast corner of Lake Abijatta, and large numbers of flamingoes on the lake.

**Nechisar National Park**: It is a national park in the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia. This park is in the Great Rift Valley, within the southwestern Ethiopian Highlands. An area of the park is 750-square-kilometre. The "Bridge of God" is found in between Lake Abaya and Lake Chamo, and the Nechisar plains east of the lakes. Park elevations range between 1,108 and 1,650 metres (3,635 and 5,413 ft) above sea

level. Nechisar National Park was established in 1974.

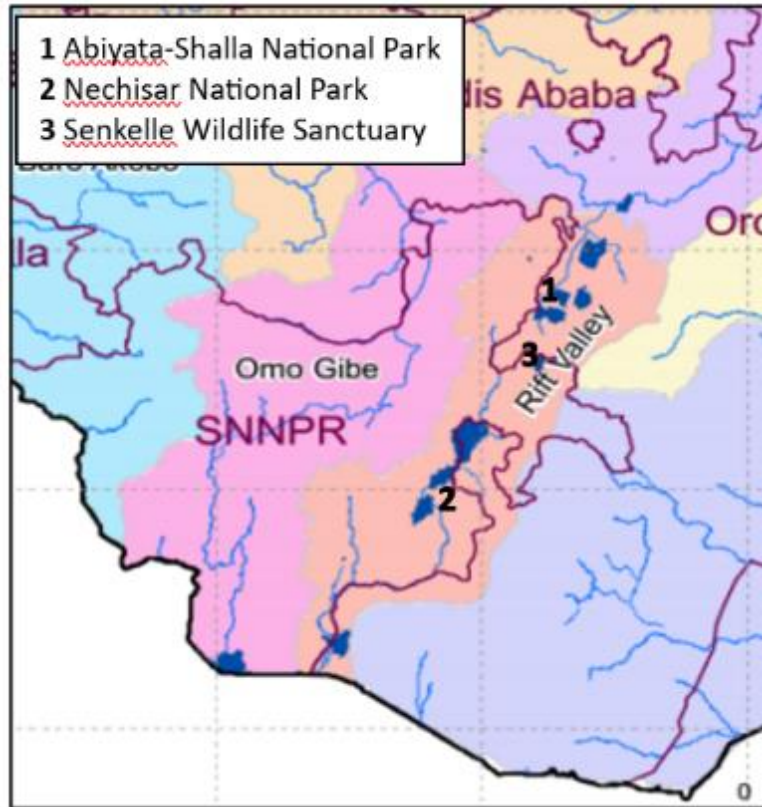
**Senkelle Swayne's Hartebeest Sanctuary** is a protected area in the Oromia Region (or *kilil*) of Ethiopia, dedicated especially to the protection of the Swayne's Hartebeest. Covering 58 square kilometers, the reserve is located some 10 kilometers south of the Shashemene-Arba Minch road near the town of Aje.

Although the sanctuary was set aside to protect the largest population of Swayne's Hartebeest (*Alcelaphus buselaphus swaynei*, endangered) in Ethiopia, a mammal endemic to the country, the original herd of 3,000 animals has dwindled to a few hundred due to poaching. Nevertheless, according to the travel writer Philip Briggs "the small size of the reserve and open terrain make it the one place in Ethiopia where Swayne's hartebeest sightings are practically guaranteed."

Although the exact locations of the priority sub-projects are not known at this stage, some of the priority sub-projects may fall *close* to these and other protected areas in Rift Valley Lakes Basin.



**Figure 4: Some of the Protected Areas in Rift Valley Lakes Basin**



#### **4.2.2 Socioeconomic Baseline**

##### **Population and Economy**

The RVLB is shared administratively between two Regional States, Oromiya and Southern Nations, Nationalities and Peoples (SNNP). It comprises three primary sub-basins defined by their main lake systems, the first comprising Lakes Ziway, Abiyata, Shala and Langano, the second Lake Hawassa and the third Lakes Abaya, Chamo and Chew Bahir. According to the Rift Valley Lakes Basin Integrated Resources Development Master Plan Study, the population of the RVLB in 2008 was 9.8 million people. According to data from CSA, this population has reached a total of 27 million by 2021.

**Table 5: Population by Administrative Units in the RVLB (2021)**

Region	Zone	Total Population
Oromiya	Arsi	3,807,082
	Borena	1,372,737
	Southwest Shewa	1,602,719
	Western Arsi	2,861,705
SNNPR	Gamo Gofa	2,240,446
	Gedeo	1,222,572
	Gurage	1,791,034

Hadiya	1,747,356
Kembata-Tembaro	996,969
Sidama	3,987,457
Silti	1,020,337
South Omo	789,016
Wolayita	2,142,063
Special <i>woredas</i>	1,445,021
<b>Total</b>	<b>27,026,514</b>

*Source: CSA - Population Size by Sex, Region, Zone and Woreda: July 2021*

The Master Plan further states that population in the basin tends to be concentrated in relatively smaller areas with higher rainfall reliability: about 73% of the population lives in only 32% of the area. There are twenty-seven ethnic groups and four of the Oromo clans (Guiji, Arsi, Jille and Boorana) who live in the Rift Valley Lakes Basin. This means that slightly over one third of the Ethiopian ethno-linguistic groups are represented in the basin.

The groups who live in the valley have distinct languages, cultures and histories. The majority of the ethnic groups in the basin speak languages that belong to Omotic and Cushitic linguistic families. The peoples in the RVLB can be categorized into three groups: mixed agriculturalists (*enset* is the dominant crop), agro-pastoralists and pastoralists. Among the groups assessed, only the Boorana Oromo subsist on pastoralism.

The RVLB is primarily an agricultural basin and agriculture will continue to be an important part of the economy. Related sectors of livestock and industry based on processing of agricultural and livestock products will also be of importance. Most of the agriculture in the RVLB is subsistence farming. Subsistence agriculture is not a basis for economic growth and social development. In fact, it is well known to perpetuate poverty simply because farmers cannot create a buffer to protect themselves from the impact of poor crop years. So while agriculture will remain important there will need to be a move away from subsistence agriculture and toward more commercial, market oriented agriculture.

The main characteristic of agriculture in the basin is low productivity. Partly this is due to the fact that most is rainfed. There is a strong correlation between GDP and annual rainfall in Ethiopia and this will continue unless changes are made in the approach to agriculture. Rainfed agriculture can be highly productive, as is proven in many areas of the world.

Fishing is carried out in Ethiopia on almost all water bodies, with commercial production concentrated in the Rift Valley Lakes of Chamo Abaya, and Ziway, not to mention and Lake Tana in the Abay River Basin. The RVLB contains most of the productive lakes in Ethiopia that have high potential fish resources and the Ethiopian Rift Valley lakes are home for about 30 different species of fish fauna. Many factors have been threatening the fish diversity of Ethiopian Rift

Valley lakes. Most of the threats are of anthropogenic origin. To mention the main one's: deforestation, poor soil and water conservation, pollution by both organic and inorganic pollutants from different sources, introduction of alien species and the last but not the least is over fishing. Many of these threats are directly or indirectly related to the water quality as well as quantity of the aquatic environment and they are interlinked to each other.

### ***Poverty and vulnerability***

According to UNICEF (2019b) since 1995/96, SNNPR has demonstrated a consistent reduction in monetary poverty, by an impressive 35 percentage points, despite the occurrence of frequent shocks, such as inflation, drought, flood and conflict. The headcount poverty rate is 21 per cent, which is below the national average of 24 per cent. With the exception of Addis Ababa, Dire Dawa and Harar, SNNPR has the lowest poverty rate in the country. The region has not recorded strong agricultural growth, nevertheless the introduction of the Productive Safety Net Program (PSNP) and strong improvements in access to basic services helped reduce poverty. As in other regions, rural monetary poverty is higher than urban poverty, at 22 per cent versus 14 per cent, respectively. The decline in food poverty was strong between 1999/00 and 2010/11, with a 29 percentage-point decline. However, it has slowed and now stands at 25 per cent, almost equal to the national average. Rural food poverty is 26 per cent compared to an urban food poverty rate of 15 per cent.

The other region that houses the basin, Oromia, has also seen a notable decline in poverty. UNICEF (2019c) reports that Oromia has experienced both good agricultural growth and positive effects from the Productive Safety Net Program (PSNP), which has resulted in poverty reduction. The implementation of broad and pro-poor economic social development policies and strategies has also contributed to an increased per capita income. The region saw a 16 per cent decline in monetary poverty between 2004/05 and 2015/16. The latest poverty analysis study found that the poverty headcount ratio in Oromia was 23.9 per cent, just above the national average of 23.5 per cent. The rural/urban divide is 25 per cent versus 15 per cent, respectively. Oromia region saw the steepest decline of food poverty in the country, from 33 per cent in 2010/11 to 21 per cent in 2015/16.

### ***Land uses and livelihoods***

The 2008 Master Plan study identified twelve major land use patterns in the RVLB. The northern part of the central valley is a mixture of open bush, open woodland and moderately to intensively cultivated land, primarily maize and sorghum. East of Lake Ziway the Wonji Fault Belt is open and dense bush land to the Asella plain where intensive barley and wheat cultivation and open grassland rises to open woodland and grassland at the boundary.

The central plain around Lakes Shala, Langano and Abiyata is characterized by open woodland and wooded grassland with intensive maize cultivation to the south and west. On the western edge of the area, the moderately intensive barley cultivation passes into intensive mixed upland arable

south to Hosaina with highly degraded eroded land north of Hosaina.

South of Hosaina to Soddo, west of Bilate, the land use becomes intensive upland arable with *enset*. East of Bilate, intensive maize production grades into open grassland, shrub land and woodland on the Hawassa caldera. East of the main road the intensive maize grades into disturbed upland forest with moderately intensive perennial crops and patches of undisturbed upland forest.

Between Hawassa and Lake Abaya, where the valley narrows, the central part is characterized by open and eroded dense bush land. Towards the eastern boundary, as the land rises, intensive mixed upland arable, including coffee and *enset*, merges with disturbed upland forest. West of Lake Abaya, towards Arba Minch, open and dense bush land occurs mixed with dry land cotton and sorghum in the lowland, with wheat, barley and *enset* on the upland. East of Lake Abaya open and dense bush rises to intensively cultivated coffee, *enset* and disturbed forest.

### ***Gender and SEA/SH***

A UNICEF study (2019b) found that according to the 2016 EDHS, in SNNPR 54 per cent of women (aged 15-49) decided themselves on their first marriage and 36 per cent of women stated that their parents made the decision for their first marriage. The rate of women who stopped attending school after marriage is 82 per cent (aged 15-49). When asked the main reason for discontinuing school, 63 per cent of women cited that they were too busy with family life, which signals a barrier for adolescent girls going to school. Another reason cited by women for discontinuing school is that their husband refused to let them continue (24 per cent). In SNNPR, 11 per cent of girls (aged 15-19) have begun childbearing. This is just below the national average and is in line with the rate of married women in SNNPR using modern contraceptive methods (40 per cent), which is relatively high compared to other regions. Beating women is common, especially in the Hammer *woreda* where there is a traditional practice of stick beating of women during certain ceremonies. In SNNPR, the proportion of women (aged 15-49) who have ever experienced psychological, physical or sexual violence by their current or most recent husband/partner is 22 per cent, 18 per cent and 6 per cent, respectively. These rates are below the national averages of 24 per cent, 24 per cent and 10 per cent, respectively. The proportion of women who believe that a husband is justified in hitting or beating his wife in various circumstances is 66 per cent, while 15 per cent of men shared the same opinion. A bride dowry is paid for women and polygamy is practiced (16 per cent). In SNNPR, 37 per cent of husbands participate in household chores, of whom 19 per cent participate every day. It is common that women are excluded from making decisions about shared property in marriage. Women are routinely denied their rights in relation to ownership.

Regarding Oromia, UNICEF (2019c) reports that in 35 per cent of women (aged 15-49) decide themselves on their first marriage and 61 per cent of women state that their parents made the decision for their first marriage. Both rates are the same as the national average. There is a

worryingly high rate of girls/ women who stop attending school after marriage, coupled with a high rate of child marriage. In Oromia, 84 per cent of women (aged 15-49) stop school, which is the highest rate in the country. Of girls who were enrolled in school at the time of their marriage, only 27 per cent were still enrolled one year later. When asked what the main reason was for discontinuing school, 71 per cent of women (one of the highest rates in the country) cited that they were too busy with family life. At 17 per cent, the percentage of girls (aged 15-19) that had begun childbearing is high compared to other regions. This relatively high rate corresponds with the low rate of married Oromo women using modern contraceptive methods (29 per cent) compared to a national average of 36 per cent. Another reason women discontinued schooling was that their husbands refused to let them continue their education (19 per cent).

### ***Access to Public Services***

#### ***Road Transport***

The northern and central parts of the valley from Hawassa northwards and across to Sodo in the west have reasonably good access to the capital Addis Ababa, which is important for many reasons, not least the access to markets. The south and southwest are remote with no nearby major centres and poor (though improving) transportation networks making travel difficult and many areas largely inaccessible during the rainy season. There are four existing main road transport routes:

- Dugda Bora – Hawassa – Dila – Bule Hora
- Kondaltiti – Hosana
- Shashamene – Sodo – Arba Minch – Konso (Kalat)
- Assela – Gedeb

The road routes cover 35 of the 72 *woredas* in the RVLB (45%). The condition of these roads is variable and feeder roads are generally both few and poor in quality.

There are three access routes that enter the RVLB from the North. The first runs from Alemgena to Sodo via Butajira and Hossaina (about 321 km long). It runs in a south-southwest direction, crossing the northwestern portion of the basin traversing the upper catchments of Meki, Dijo and Bilate Rivers. The main corridor that passes through basin is the 324 km road from Adama - Asela -Bekoji-Dodola - Robe-Goba. A road from Mojo - Batu - Shashamene - Hwasa - Dila - Yabelo - Moyale is a main corridor. This is an asphalt road of 771 km length from Addis Ababa to Moyale and it is part of Trans-East African highway. There is a 110 km dry weather road from Jinka – Beto – Zala - Mela which traverses the upper catchment of the Weito River

#### ***Air Transport in the Basin***

Hawassa and Arba Minch house the two airports in the Basin. Ethiopian airlines have regular flights to the two destinations.

#### ***Telecom***

Many of the urban centres have access to telecommunication services. Even a good number of villages in the upper and middle basin rural areas have wireless telephone services. With the recent expansion in services, several towns across the basin have begun to access 4G mobile network. Some of the towns with 4G LTE service are Wolaita Sodo, Wolkite, Jinka, Arbaminch, Butajira, and Hosa'ena

#### *Water supply and sanitation*

The water supply and sanitation coverage of the RVLB is encouraging. According to the One WASH National Program review (2018), by 2014, 88% of urban areas in Oromiya and 93% in SNNPR have access to water supply. Rural coverage is lesser – some 88% in Oromiya and 69% in SNNPR have access to improved water supplies. Reliable regional or basin level data on sanitation is not available. Nonetheless, findings of the 2016 Demographic and Health Survey showed that 52% and 51% of households in SNNPR and Oromia, respectively, had a place for hand washing.

#### *Cultural Heritage*

RVLB encompasses natural, cultural, historical and religious tourist attractions that are currently in use. Prominent cultural heritages include the Gada ceremony of Guji and Borana Oromo as well as the islands of Lake Ziway which are inhabited by the Zay people. Tulu Gudo (Debre Zion), Tedecha, Fandero, Debresina and Gelila are a group of small islands where the Zay people currently reside. They contain ancient, well-preserved monasteries. The highlanders of Sidama, Guragehe, Silti, Alaba, Hadya, Kambata, Wolita, Gofa Dareshe and others have diverse cultures. The cultural heritages of the Hamar, Tsami, Arbore, Bana, Ari, Malle and other ethnic groups are also features of the basin.

### **4.3 Omo-Gibe River Basin<sup>6</sup>**

#### ***4.3.1 Biophysical Environment***

##### ***Location***

The Omo-Gibe River Basin is located in South-West part of Ethiopia, between 4°00' N and 9°22' N latitude, and between 34°44' E and 38°24' E longitude. It is an enclosed river basin that drains into Lake Turkana near Kenya border which is its southern boundary. It is bounded by the Baro-Akobo Basin in the west, the Blue-Nile Basin in the north and northwest and small area in the northeast bordered by the Awash Basin and the whole of the eastern side borders with the Rift Valley Lakes Basin. It is approximately 550 km long and encompasses parts of two National Regional States namely: Oromia which occupies the northeastern part of the Basin,

---

<sup>6</sup> Since basin-specific information is not available, we have used region-level information for several of the sub-sections. And, since the Omo-Gibe basin is found in the same two regions (Oromia and SNNPR) as the RVLB, we have not repeated information contained there in the Omo-Gibe section.

and the Southern Nation, Nationalities and Peoples Regional State (SNNPR) which makes up the rest of the basin.

### ***Topography***

The basin divides sharply and almost exactly into highlands in the northern half which are characterized by steep slopes and altitudes reaching up to 4200 m.a.s.l. and lowlands in the southern half which are characterized by relatively gentle and undulating slopes and altitudes as low as 500 m.a.s.l.. The northern highlands are deeply separated and drained by the Gibe and Gojeb river systems merging to form the Omo in a deeply entrenched gorge. The Basin divides  
The Basin is approximately 550 km long in the north-south direction. East-west, the Basin is very irregular and varies in width from a point at the extreme north to about 225 km in the central parts, and terminates at the Kenyan border with a Basin width of about 100 km. The southern extremity of the basin coincides with Lake Turkana.

### ***Climate***

The basin has favorable climate of moderate temperatures and rainfall is adequate in the central, eastern and western Basin. The lowlands, by contrast, are characterized by low altitude, relatively gentle slopes, and a harsh climate of high temperature and low to medium-low rainfall. The climate of Omo river valley varies from tropical humid in the highlands that includes its northern part to the hot arid climate in its southern parts of the flood plain. Intermediate between these extremes and for greater part of the basin the climate is tropical sub-humid. Climate in this basin is associated with altitude, the highlands have colder temperature (around 17 0C) and sufficient rainfall reaching up to 1900 mm/yr in the northern and western part of the basin, the lowlands however, have high temperature (around 29 0C) and low to medium rainfall which does not exceed 300 mm/yr near Lake Turkana.

### ***Soils***

Soils in this basin are largely volcanic in origin and are relatively fertile. The soils in the highland areas are dominated by deep to very deep red, and reddish brown clay loam overlaying clays and are well drained. The soils are dominantly clay, often vertic but with pockets of sand soils and sandy layers characterized by poor drainage and salinity problems. The higher areas to the east are dominated by shallow to deep sandy and infertile soils. All these soils have moderate fertility. The lowland soils are shallow with coarse textured whereas the soils in the highland areas are dominated by deep to very deep red, and reddish-brown clay loam overlaying clays and are well drained. The soils are dominantly clay, often vertic but with pockets of sand soils and sandy layers characterized by poor drainage and salinity problems. The higher areas to the east are dominated by shallow to deep sandy and infertile soils.

### ***Surface water and Groundwaters***

The Omo Gibe River Basin is drained by two major rivers from the highlands, the Gibe

River flowing southwards and Gojeb River flowing eastwards. Gibe River is called the Omo River in its lower valley south and south westwards from its confluence with the Gojeb River. The northern part of the basin has a number of tributaries from the northeast of which the largest are the Walga and Wabe Rivers. The Tuljo and Gilgel Gibe Rivers are also important rivers that drain to the Gibe.

The Omo Gibe basin is endowed with an annual water resource potential. Average annual outflow from the basin into Lake Turkana is about 16.6 Mm<sup>3</sup> and a total ground water potential that may be developed is estimated to be 1 Bm<sup>3</sup>/year. Omo and Gibe River drain the upper and lower reaches of Omo –Gibe basin.

Gibe III Hydro Power Project has been recently completed and is currently generating power. It is the third in a cascade of hydro projects along the Omo River, and fourth and fifth projects further downstream are being studied. The complete development of the Omo River hydropower schemes includes Gibe I is located upstream of Gibe II and Gibe II upstream of Gibe III.

### ***Flora***

Riverine vegetation along the perennial Omo River, which flows from the Ethiopian highlands to its terminal. The riverine zone in the lower Omo basin supports relatively luxuriant vegetation compared with the dry grasslands in the surrounding plains environments. Habitat conditions along the lower Omo have changed significantly during the past century, primarily due to a period of reduced rainfall and river flow at the river's terminal. A combination of open canopy woodland, shrub thicket and grassland prevailed on the more recently exposed levees, in and near the modern delta; closed canopy woodland and forest predominated on fore levees in the meandering segment. *Ficus sycomorus* (*Ficus sycomorus*, least concern), *Tapura fischeri* (*Tapura fischeri*, least concern), *Melanodiscus oblongus* (*Megalobulimus oblongus*), hackberry (*Celtis integrifolia*) and *Trichilia roka* (*Trichilia emetica*) were most significant in upstream forest sites, whereas *Cordia sinensis* (*Cordia sinensis*), *Acacia mellifera* (*Senegalia mellifera*), *Ziziphus mauritiana* (*Ziziphus mauritiana*) and *Ficus sycomorus* (*Ficus sycomorus*, least concern) were more common in communities nearer the lake. The once dominant forest cover in the basin has been substantially cleared and land is converted to agriculture. The western highlands of the basin contain part of one of the two remaining large forest areas of Ethiopia.

### ***Fauna***

Omo National Park offers excellent opportunities to view wildlife. It supports large herds of elephants (*Loxodonta Africana*, critically endangered), buffalos (*Syncerus caffer*, near threatened), Burchell's zebra (*Equus quagga burchellii*), eland (*Taurotragus oryx*, least concern), beisa oryx (*Oryx beisa*, endangered), tiang (*Damaliscus lunatus tiang*, least concern), Lelwel hartebeest (*Alcelaphus buselaphus lelwel*, endangered), and Grant's gazelle



(*Nanger granti*, least concern). Other wildlife that is relatively easy to see include lions (*Panthera leo*, vulnerable), African wild dogs (*Lycaon pictus*, endangered), giraffe (*Giraffa camelopardalis*, vulnerable), ostrich (*Struthio camelus*), greater kudu (*Tragelaphus strepsiceros*, least concern), hyena (*Crocuta Crocuta*, least concern), black rhinoceros (*Diceros bicornis*, critically endangered), hippopotamus (*Hippopotamus amphibius*, vulnerable), and warthog (*Phacochoerus africanus*, least concern). There are different animals in the Omo National Park including Elephant (*Loxodonta Africana*, critically endangered), Giraffe (*Giraffa camelopardalis*, vulnerable), Lion (*Panthera leo*, vulnerable), Cheetah (*Acinonyx jubatus*, vulnerable), and Eland (*Taurotragus oryx*, least concern), oryx (*Oryx beisa*, endangered), Lelwel hartebeest (*Alcelaphus buselaphus lelwel*, endangered), Burchell's zebra (*Equus quagga burchellii*), Buffalo (*Syncerus caffer*, near threatened), kudu (*Tragelaphus strepsiceros*, least concern), Leopard (*Panthera pardus*, vulnerable), Waterbuck (*Kobus ellipsiprymnus*, least concern) and Colobus monkeys (*Simia polycomos*).

There are also several bird species in the National Park. Omo National Park, the largest in the country covers 4,068 square kilometres. It is a vast expanse of true wilderness, adjacent to the Omo River, which flows southwards into Lake Turkana and is one of the richest and least-visited wildlife sanctuaries in eastern Africa. Eland, oryx, Burchell's zebra, Lelwel hartebeest, buffalo, giraffe, elephant, waterbuck, kudu, lion, leopard and cheetah roam within the park's boundaries.

The lower Omo valley is rich in wildlife and was designated a UNESCO World Heritage site in 1980. The riverine forest along the Omo River is important for several different bird groups, including herons (*Ardea cinerea*, least concern) and egrets (*Ardea alba*, least concern), kingfishers (*Halcyon malimbica*, least concern), barbets (*Lybius undatus*, least concern), chats (*Monticola semirufus*, least concern), thrushes (*Turdus abyssinicus*, least concern), woodpeckers (*Dendropicos abyssinicus*, least concern), pigeons (*Streptopelia lugens*, least concern), shrikes (*Laniarius ruficeps*, least concern), warblers (*Sylvietta brachyura*, least concern) and flycatchers (*Terpsiphone viridis*, least concern). Blue-breasted kingfisher (*Halcyon malimbica*, least concern) is a recent discovery in these forests. Somali–Masai biome species include Red-naped bushshrike (*Laniarius ruficeps*, least concern), Bare-eyed thrush (*Turdus tephronotus*, least concern), Boran cisticola (*Cisticola bodessa*, least concern), Grey-headed silverbill (*Lonchura griseicapilla*, least concern) and sparrow-weaver (*Plocepasser donaldsoni*, least concern) Violet wood hoopoe (*Phoeniculus damarensis*, least concern), babbler (*Turdoides*) and morning bird (*tenebrosus*, least concern).

### ***Sensitive habitats***

**Omo National Park:** This Park established in 1980 and it covers approximately 4,068 square kilometers. The lower reaches of the Omo River were declared a UNESCO World Heritage Site in 1980, after the discovery of the earliest known fossil fragments of *Homo sapiens*. The Omo

National Park remains one of the most remote and scenic in Ethiopia. It contains the lower valley of the Omo part of the 11 sites listed on the World Heritage List of UNESCO as a result of the discovery of fossil fragments of *Homo sapiens* back some 195,000 years. The people of Mursi, Suri, dizi and Nyangatom live within this park.

***Mago National Park:*** The Mago National Park was established in 1979. This park is located in the Southern Nations, Nationalities, and Peoples' Region about 782 kilometers south of Addis Ababa. This park is divided by the Mago River (a tributary of the Omo River), into two parts. To the west is the Tama Wildlife Reserve, with the Tama River defining the boundary between the two sites. To the south is the Murle Controlled Hunting Area, distinguished by Lake Dipa which stretches along the left side of the lower Omo.

The major resources of environmental significance in and around the Park are the riverine forest and the wetlands along the lower Mago and around Lake Dipa as well as the grasslands and scrub on the sides of the hills. In this park, the main landforms are Savanna, Acacia trees, Shrub land, and also Woodland. Open grassland comprises about 9% of the park's area. The age-old large trees are found in the riverine forest. Areas along the lower Omo are populated with a rich diversity of ethnic groups, including the Ari, Banna, Bongoso, Hamar and Karo. The Mursi, known for piercing their lips and inserting disks made of clay, are a major cultural attraction. Wild animals that could be observed in the park include Black Rhinoceros (*Diceros bicornis*, critically endangered), Lion (*Panthera leo*, vulnerable), Leopard (*Panthera pardus*, vulnerable), Hippopotamus (*Hippopotamus amphibius*, vulnerable), Cape Buffalo (*Syncerus caffer*, near threatened), Cheetah (*Acinonyx jubatus*, vulnerable), Giraffe (*Giraffa camelopardalis*, vulnerable), Hyena (*Crocuta Crocuta*, least concern), African Wild Dog (*Lycaon pictus*, endangered), Warthog (*Phacochoerus africanus*, least concern), Nile Crocodile (*Crocodylus niloticus*, least concern), Zebra (*Equus quagga burchellii*) and African Elephant (*Loxodonta Africana*, critically endangered).

Adjacent to the Omo River, is home to a remarkable range of wildlife. 306 species of birds have been identified while large herds of animals such as buffalo, elephants, giraffe, cheetah, lion, leopard, and Burchell's zebra are common.

Other notable protected areas in the basin include Chebera Churchura National Park and Maze National Park.

Although the exact locations of the priority sub-projects are not known at this stage, some of the sub-projects may fall *close* to these and other protected areas Omo-Gibe basin.

***Figure 5: Some of the Protected Areas in Omo-Gibe Rivers Basin***



### ***Archaeological Site***

The river basin is famous for its large number of early hominid fossils and archeological findings such as early stone tools that led to its inclusion on the UNESCO World Heritage List. The entire Omo river basin is also important geologically and archaeologically. Over 50,000 fossils have been identified from the lower valley, including 230 hominid fossils dating to the Pliocene and Pleistocene. Fossils belonging to the genera *Australopithecus* and *Homo* have been found at several archaeological sites, as well as tools made from quartzite, the oldest of which date back to about 2.4 million years ago.

The first archaeological discoveries in the area were in 1901, by a French expedition. The most significant finds were made later, between 1967 and 1975, by an international archaeological team. The team located a number of different items, including the jawbone of an *Australopithecus* man, estimated at some 2.5 million years old. Archeologists have also found fossil fragments of Olduvai hominids from the early Pleistocene era and up to the Pliocene era. Quartz tools have been located with some of the later *Homo sapiens* remains found on the riverbanks. Since then, the excavations have been carried out by a joint French and American team. In addition to early hominid fossils, a diversity of mammal and fish fossils has been found within the Omo Valley.

### ***4.3.2 Socioeconomic Baseline***

#### ***Population and Economy***

The Omo Gibe basin is spread across two regions – Oromia and the Southern Nations, Nationalities, and Peoples Regional State. According to the OMO-Gibe Basin Development Master Plan Study (1995) three zones of Oromia, namely, Jima, East Welega, and Western Shewa are within the basin. In SNNPR, nine zones and four special *woredas* constitute the basin. The combined area of the two regions is about 79275 sq. km. of which the Southern Region accounts for most of the area: 60163 sq.km. The population of the basin totaled 4 million in 1984, with an annual rate of growth of 3.2% between 1984 and 1994 slightly higher than the average rate for the country (3.1%). As of 2021, the total population of the basin is calculated to be about 21.3 million (CSA 2021).

**Table 6: Population by Administrative Units in the Omo-Gibe Basin (2021)**

Region	Zone	Total population
<b>Oromiya</b>	Western Shewa	2,973,697
	Eastern Welega	1,764,328
	Jimma	3,497,724
<b>SNNPR</b>	Gurage	1,791,034
	Hadiya	1,747,356
	Kembata Tembaro	996,969
	Wolayita	2,142,063
	Gamo Gofa	2,240,446
	Dawro	671,090
	Southern Omo	789,016
	Keffa	1,202,812
	Bench-Maji	931,566
	Yem Special <i>Woreda</i>	113,505
	Basketo Special <i>Woreda</i>	79,236
	Konta Special <i>Woreda</i>	126,874
	Alaba Special <i>Woreda</i>	331,724
<b>Total</b>		<b>21,399,440</b>

Source: CSA - Population Size by Sex, Region, Zone and *Woreda*: July 2021

In terms of settlement hierarchy, Jima is the northwestern regional center serving the Oromia regions part of the basin. In the lower part of the basin, Hosaina, Sodo and Jinka are important centres.

Agro- (including forestry) industrial facilities, specifically coffee processing, grain and saw mills, bakeries, furniture making and oil mills make up most of the production establishments, and generally produce the highest value added per employee.

The South Omo Zone, one of the zones in the Basin, is inhabited by linguistically and culturally diverse but small and vulnerable indigenous agro-pastoral ethnic groups which include the Arbore,

Dasanetch, Nyanatom, Hamar, Bena, Bume Mursi, Bodi, Tsemai, and Karo. If we take the subsistence pattern of the first three groups, the Arbore have a mixed economy based on flood-retreat cultivation and animal husbandry. Agriculture provides the staple food, sorghum and maize. Their pastoral economy which follows a pattern of transhumance is also central to their subsistence, rituals and values. When the condition of the rivers allow, fishing is also practiced as supplementary source of food. The Nyanatom are agro-pastoral community who inhabit along the western bank of the Omo River and the Kibish. They have a mixed economy of sorghum and maize farming and animal husbandry. For their flood irrigation, they use the waters of the Omo River and their pastoralism follows a pattern of transhumance. Pastoralism is the mainstay of the Dassanetch ethnic group. Out of the total community, 70% are riverine pastoralists along the Omo Valley, and the remaining 30% pure pastoralists. But as additional means of livelihood, the Dassanetch practice farming on the alluvial soils around Omo River. Other supplementary sources of income are fishing, bee-keeping, charcoal making, and sale of fire-wood.

### ***Access to Public Services***

The major means of transport in the basin is via road. No railways serve the area, there is no river transport and limited air service. Goods are commonly trans-shipped on to motor lorries only at the larger towns of the Basin, which have all weather links to the national road network.

There are three main transport corridors into the Basin from Addis Ababa, each served by an asphalt highway. Each of these is fed by a limited system of all-weather gravel roads serving most of the main towns. The quality of road links decreases significantly towards the south and southwest. Seven all weather roads traverse the Basin, all of varying quality and with varying traffic flows.

- i) Addis Ababa-Welkite-Jima- Bonga-Mizan Teferi road
- ii) Addis Ababa-Hosaina-Sodo-Sawla road
- iii) Addis Ababa-Mojo-Shashemene-Sodo-Arba Minch road
- iv) Addis Ababa-Gedo-Nekemte road
- v) Jima-Bedele-Nekemte road
- vi) Butajira-Ziway road
- vii) Jima-Chida road

All *woredas* have some access to the all-weather road network although the quality and extent of that access is often limited. Much of the Basin consists of dissected mountainous terrain. Roads and tracks must traverse steep mountain ridges, many of which are eroding and subject to both flash floods and land slips. Road construction and maintenance in this terrain is expensive and technically difficult.

The Basin was well served by a network of airstrips and landing fields, but most are now out of use. Scheduled flights serve five airstrips of relevance to the Basin, two located within the catchment and three outside but adjacent. Only Jima has a developed airport with a 2 000 m runway, serviced by 13 scheduled flights per week. Jinka has a 1 100 m grass strip. Jinka's air service (four flights per week) is important for the south of the Basin, as the road access is circuitous and liable to closure after heavy rain. Tum - the HQ of Maji Zone - has a 1 100 m grass strip, serviced by four flights per week. Road access to Maji Zone is by dry weather 4WD track, so that the modest air link to Tum is vital for effective administration of the remote south-west. The airfields at Arba Minch and Mizan Teferi (currently out of use), are important for the Basin's development, though they each lie just outside the catchment boundary.

River navigation on the Omo is confined to small-scale tourist rafting and a small number of pontoon crossings along the river's lower reaches. The Omo and the Gojeb Rivers are not suitable for navigation by larger commercial vessels, owing to shallow water conditions during the low-flow, dry season river stages and the occurrence of low rapids along the river courses. However, the rivers offer some potential for the use of lightweight, portable river boats for access to the mountainous mid-Basin *woredas* adjacent to the river system. The use of small powered river craft for the transport of personnel and lightweight supplies, such as vaccines, veterinary supplies, salaries, or schoolbooks, would allow more effective administration of these remote riverside *kebeles*.

### ***Cultural Heritage***

The Omo-Gibe basin is home to multiple material and non-material cultural heritages. In Jimma Zone, for instance, it is home to the Aba Jifar palace, a museum, and the Belete Gera Forest, which is part of the “Eastern Afromontane biodiversity hotspot” and is characterized by a rich fauna and flora with many endemic species.

The various zones and *woredas* in SNNPR that make up the basin are home to several ethnic groups with diverse cultural heritage, including traditional administration, conflict resolutions, natural resources management, and systems of mutual support.

## **5 Vulnerable Groups and Underserved Peoples in the Project Basins**

In order to conceptualize and define vulnerability in the context of IDRMP Project basins, it is important to understand and determine the factors that expose people to vulnerability situation. Vulnerability describes a situation in which people find themselves that is likely to expose them to certain adversities, and reduce their resilience to cope with the resulting negative impacts. Accordingly, situations that make people vulnerable may include poverty, inflation, natural disasters like flood, conflict, lack of access to information and communication, and embedded social and cultural attitudes and practices. According to the WB directive on the addressing the risks and impacts on the disadvantaged or vulnerable groups, in particular, factors such as gender, ethnicity, religion, occupation, disability have acted as vulnerability grounds on which people have been discriminated against and experienced various disadvantages.

The National Social Protection Strategy (NSPS) of Ethiopia recognizes vulnerability as having various dimensions, and one of these is social exclusion and deprivation. Vulnerability in the context of exclusion and deprivation encompasses ‘Individuals/households who due to gender, disability, age, orphan hood, ethnicity, location or other factors face marginalization from society, or discrimination in access to services or work. People who are powerless and voiceless within their household or community’. Vulnerability can therefore be understood as an all-encompassing concept that covers all types of disadvantaged social groups who are objects of denial, exclusion, neglect and contempt, in connection with the share of benefits and participation in decision making in multi-layered mainstream development programs.

In respect to this, focus on the identification of vulnerable groups and their particular circumstances, needs and interests constitute a key principle in the design and overall management of IDRMP. In light of this and based on the review of relevant literature gathered for Social Assessments carried out for other relevant projects (SLMP, PSNP, AGP, LFSDP), in the context of this ESMF vulnerable groups and underserved peoples IDRMP in the Project basins are: women particularly female-household heads and those in polygamous unions, pastoral and agro-pastoral groups, unemployed and underemployed rural youths, and culturally distinct groups.

### **5.1 Women**

IDRMP treats gender as crosscutting issue requiring special focus, to empower women so as to fully participate and benefit in the whole range of project interventions. In Project basins and sub-basins, as is the case in wider society, women become vulnerable as a result of socially constructed gender-based values and belief systems and their productive and reproductive roles in the household. In specific terms, women’s status in relation to their domestic division of labor (childcare and food preparation), socioeconomic status (limited property and ownership rights), and unequal power relations and burden of responsibilities deserve closer examination in the overall IDRMP design and implementation. The status of Ethiopian women can also be seen in terms of: societal attitudes towards women; their educational status; and women’s awareness of

their rights. More specifically, societal attitudes towards women (e.g., they are meant to care for the domestic affairs, namely childcare, preparation of food, etc.); no/little education (with all its ramifications such as low awareness of their rights both at micro- and macro-level); and their roles and statuses in the family (e.g., in polygamous unions, female-headed households) deserve closer examination in view of the objectives of the IDRMP.

In connection with this Project, the World Bank task team in consultation with relevant stakeholders in Ethiopia conducted a rapid analysis to identify key gender gaps in DRM in Ethiopia to consider the possibility for IDRMP to address some of them. According to the preliminary findings of the assessment, key gender gaps in DRM are: (i) women and girls face higher risks after a natural disaster takes place, partly because of their limited voice and agency; (ii) women often do not have the income and means to effectively respond to disaster and reduce their exposure and vulnerability, which, in turn, affects their capacity to cope with future shocks; and (iii) women lack access to early warning, as these are often issued in public places, while women spend most of their time at home for childcare and other household chores.

Therefore, it is crucially important to seriously consider the gender specific statuesque in Project basins and sub-basins, the place of women in the project and how gender issues should be mainstreamed in respect to the key principles, prime objectives, and activities of IDRMP.

## **5.2 Pastoral and Agro-Pastoral Groups**

Historically, pastoral and agro-pastoral groups used to be the most underserved communities in Ethiopia. An estimated eight to ten million people, 10% of the country's total population practice pastoralism as their predominant mode of survival across the lowlands of Ethiopia. The rangelands where pastoral practices are extensively carried out represent two-third of the total national land area. These are located in Somali and Afar national regional states, the Borana Zone of Oromia Region, and the South Omo Zone of the Southern Nations, Nationalities and Peoples Regional State. The pastoral and agro-pastoral populations belong to some twenty-nine ethno-linguistic groups that are classified as Cushitic, Omotic and Nilotic. The main pastoral nomadic ethnic groups in Ethiopia are geographically locates as follows: the Afar, Issa, and Karrayu in the northeast and east (in the middle and lower Awash Sub-Basins), the Somali in the southeast (in the Awash Basin), the Borana and Gujji in the south (in the RVLB), and the Hamar, Benna, Arbore, Tsemai, Mursi, Bodi, Dassanecth, Nyangatom, and Karro, in the southwest (in South Omo Zone of the Omo-Gibe Basin).

Beset as it is by a range of adverse conditions, migratory pastoralist continues to sustain an increasing size of human population. Since the recent past, the herding populations in the lowland have largely been impoverished and food insecure. The arid climate of the regions characterized by frequent cases of drought has been a principal contributory factor to the prevailing conditions. Resource degradation and water scarcity aggravated by steady increases in human and livestock



population, recurrent droughts, and the conversion of sizable areas of pastoral territory into dry land agricultural zones have resulted in the reduction of rangelands in terms of both quality and size. Poverty among the nomadic populations extends far beyond food insufficiency. They also have little access to socioeconomic benefits like health and education services and opportunities to income generating activities outside of the livestock domain.

The situation of pastoral communities was further compounded by lack of due policy attention by previous Ethiopian governments. The needs and interests of pastoral groups was in those days not given the attention they deserved in the design and implementation of development policy intervention, as compared to smallholder agricultural communities in the highlands. As a result, a substantial portion the development investment was devoted to the promotion of the non-pastoral sector of the economy. Thus, in addition to the ecological stress that pastoralists suffered, they also experienced economic and political marginalization.

### **5.3 Conflicts/tensions over resources**

Another area of possible constraints to development interventions is inter-ethnic tension and conflict in the nomadic and transhumant pastoral areas. Current studies indicate that in most of the pastoral and agro-pastoral areas, including those in the three basins selected for IDRMP subproject interventions, the inter-ethnic relationships have been marked by intermittent conflicts and animosities and even open warfare. In this regard, critical problems have been witnessed among the Borana and Somalia and Guji on the one side, and the Kore and Burji on the other, also among the Konso and Derashe and the agro-pastoral groups of the South Omo Region, in the Rift Valley Lakes Basin. There are also frequent clashes between the Afar and Karrayu, the Afar and Issa Somali, the Afar and Arsi Oromo, and the Afar and Ittu in the middle and lower Awash Valley of the Awash River Basin. In the lower flood plains of the Omo-Gibe Basin, recurrent inter-group conflicts are widely prevalent between the Hamar and Dassanetch, the Borena and Arbore, the Borena and Dassanetch, and the Ngnagatom and Turkana.

The main reasons for the conflict are competition over the use of grazing land and water, cattle raiding and counter-raiding, land ownership and boundary disputes. Ethnic based regionalization has also contributed considerably to the escalation of conflicts among some neighboring groups, as there are no clear demarcations of ethnic boundaries.

For instance, hostilities among the nomadic pastoral groups in the Middle and Upper Awash Valley region are aggravated largely by the alienation of grazing land by the expansion of large-scale commercial irrigated agriculture and the extensive network of conservation areas for game/tourist parks. The conflicts are intensified as one group encroached into the territory of the other following their displacement by the development of concession agriculture. In the same way, in the 1980s, part of the territory inhabited by the agro-pastoral communities in the Lower Omo Basin was

turned into a state-run irrigated farm, and recently the government has begun leasing out huge tracts of community land to foreign companies and foreign governments so that they grow cash crops including biofuels. As the government has taken over more and more community land, competition for scarce resources has intensified. Moreover, in July 2006, the Ethiopian government signed a contract with the Italian company, Salini Costruttori, to build Gibe III, one of the biggest hydro-electric dams in the country. This has put an end to the natural floods of the Omo River, and as the natural flood with its rich silt deposits disappears, subsistence economies are threatened with collapse, and many of the flood retreat cultivating agro-pastoral groups in the area facing food shortage. The potential for inter-group conflict will increase as people compete for scarce and dwindling resource.

Thus, if left alone such inter-ethnic conflicts will be serious challenges for the development undertakings in the basins. No doubt these inter-ethnic tensions and conflicts would pose contextual security risks in the implementation of basin-level flood risk reduction investment projects, while at the same time the IDRMP physical investment subprojects may have the potential risk of precipitating the unintended consequence in terms of aggravating the tensions in the project *woredas*.

#### **5.4 Unemployed and Underemployed Rural Youths**

In all the basins and sub-basins selected for IDRMP, unemployment and underemployment are the main factors that cause rural youths to be vulnerable groups. In the local setting of these Project areas (in Upper Awash Sub-Basin, RVLB and Omo-Gibe Basin) identified as unemployed rural youths are boys and girls who are out of work, not being able to find jobs in the farming villages to earn their own income and support themselves. These are young people who were forced to quit school at secondary or preparatory levels because of various challenges. Included in the same category are young men and women who have returned to their natal villages to live with their families, not finding work in the urban areas after graduating from technical and vocational colleges or institutions of higher learning.

On the other hand, underemployed rural youths refer to young villagers who continue to live with their families or kids, but are without their own source of income that fully occupies them. For this reason, they engage in livestock husbandry and crop production as part of the labor force in the household. Due to the ever-dwindling family land resulting from land fragmentation, the range of household tasks can hardly engage them to the fullest extent of their time and energies.

Regional rates of unemployment and underemployment are high. In the Afar, according to the 2013 Labor Force Survey, rural unemployment stood at 7.3%, while underemployment was recorded at 29.7. In Amhara, the figure is 1.6% and 33.6%, in Oromia, 1.5% and 43.8, Somali, 3.8% and 21.5%, SNNPR 2.6% and 38.8%, Addis Ababa, 24.2% 31.4%, and Dire Dawa, 22.3 and

23.5%, respectively.

In respect to this, the situation of rural youths are critical particularly in Oromia and SNNPR regions, and these areas are characterized by land scarcity because of high rates of land fragmentation and population growth. Cognizant of these facts in the regions, the Oromia and SNNPR regional states have developed plans to invest large amounts of finance on the expansion of rural youth job-creation in parts of the region, including in IDRMP sub-project *woredas* and towns.

### **5.5 Occupational Minorities**

Occupational minorities inhabiting in the Project areas are potters, smiths, weavers, tanners and carpenters, who have been historically despised and marginalized because of their occupation. As a result of this, they used to be excluded for generations from mainstream social and economic development activities including access to land.

Owing to the pressures resulting from years of social ostracism, many were forced to abandon their occupation. With the improvement of social attitudes and practices particularly since the land reform of the mid 1970s, such occupational groups have generally been rehabilitated, becoming entitled to land holdings and hence practicing farming and off-farm activities such as wage labor, together with their crafts-making. In these areas, pottery and tannery in particular are still viewed as occupational skills left to the minorities ‘inherited’ by sons and daughters from their parents. Because of this, marriage with these groups is considered as taboo, forcing tanners and potters to inter-marry within their respective groups. On the whole, though, the social integration and participation of these occupational minorities continues to be stronger, which is facilitated by the impacts development projected implemented by different sector ministries.

For example, the Manja, who live in the Konta and Decha in Omo-Gibe Basin in SNNPR, are a largely despised and vulnerable occupational minority. They are associated with a number of stereotypes related to their eating habits and personal hygiene. It is said that they eat the meat of religiously prohibited animals and that they do not keep themselves and their cloths clean. Such views and attitudes have led to the treatment of the Manja as social outcasts, resulting in their exclusion from all forms of interaction in the community including engaging in agricultural activities. Nonetheless, current trends are such that conditions are improving for the Manja, and they are being reintegrated with the community.

## **6 ESMF Implementation Process, Monitoring and Reporting**

### **6.1 ESMF Implementation process**

Attention needs to be paid to the use of sound eligibility criteria that meets the World Bank safeguard policy in selecting and monitoring Sub projects of the IDRMP to ensure their operational quality. In this regard, one of the important requirements is to ensure the project activities are in line with the legal requirements of the country and the World Bank.

This ESMF specifies (i) criteria which help avoid activities that might give rise to unacceptable or unmanageable environmental impacts, and (ii) procedures for screening that there will be no significant impacts and for identifying those that may require ESIA and other ES instruments. In case an ESIA is required, implementing agencies are responsible to undertake such a study and get clearance from the local and regional government authorities. In such cases, the implementing agencies to which resources of IDRMP is channeled is responsible for identifying activities requiring ESIA following an initial screening process, while the competent environmental authorities at the regional administration level are responsible for advising on the required level of ESIA study and for ensuring that it is conducted to an acceptable standard.

Taking into account World Bank's Guidelines, the following are list of ineligible projects that encompasses projects with any of the attributes listed below:

- Project activities with the potential for significant conversion or degradation of critical habitat.
- Project activities with the potential for significant conversion or degradation of natural habitats if there is no technically and financially feasible alternative and appropriate mitigation measures to put in place.
- Project that degrades forest resources unless there is no viable alternative, all due processes under international and national law are complied with, the adverse impacts will not lead to net reduction in the biodiversity value, the adverse impacts will not lead to net reduction on sensitive ecological components, will not lead to significant degradation of the habitat, mitigation plan will be designed to achieve net gains, and long-term monitoring and evaluation program is put in place.
- Any project with the potential for significant damages to cultural property unless identification, valuation, and protection of the cultural resources is possible.
- Any project or activity that does not meet the legal requirement of the country, including gazetted environment, health and safety legal requirements,
- Any project or activity that is not compatible with the international convention that Ethiopia has ratified,
- Any project or activity, where children under 18 years of age are employed.

The ESMF process starts with the project activities or sub-projects. This includes identification

of project activities (particularly field level activities/sub-projects) based on beneficiaries' or communities' demand. Subsequent technical support and advice will be received from the regional/local administrations to identify sub-projects under Sub-component 2.1 and to some extent Sub-component 2,3. The basin offices will further develop and prepare field level sub-projects identified by beneficiaries, communities, and regional/local administrations. Basin offices, if required, will conduct field appraisal of the proposed project activities or sub-projects prior to commencing environmental and social safeguards screening. For the other project components (Component 1, Sub-component 2.2, sub-component 2.4, and Component 4), the implementing agencies (MoWE, EDRMC, EMI, the basin offices, and MoUDI) will identify, prepare, and screen sub-projects. In all cases, the PMU at MoWE, PCU at EDRMC, and EMI have overall responsibility in identification, developing, preparation, and screening of the sub-projects under all project components and sub-components.

The screening process will be carried out against the pre-set criteria for eligibility of the sub-projects and environmental and social safeguards at national and/or basin levels using the screening checklist presented under **Annex 1**. The basin offices will take the responsibility of screening sub-projects developed at basin level while MoWE, EDRMC, and EMI will screen identified at national level. Screening reports, and recommendations will be compiled and send to environmental offices for further review and approval. For sub-projects developed at basin level, regional and local/*woreda* environmental protection commissions, authorities or offices will take the responsibility of reviewing and approving the screening reports. On the other hand, for sub-projects developed at national level, either national or regional environmental commissions or authorities (depending on the sub-project type/extent) will take the responsibility of reviewing and approving the screening reports.

The environment protection commissions, authorities and offices at regional, zonal and local/*woreda* level will review the planned sub-projects developed at basin level, screening results and recommendations, and provide decisions of approval or pass recommendations if any design modifications or additional safeguards instruments are required. Similarly, for sub-projects developed at national level, federal or regional environmental commissions and authorities will process the screening reports. The final cleared and approved sub-project plan documents will be referred to the respective implementing agencies (MoWE, EDRMC, EMI, MoUDI, and basin offices) with all the enclosed environmental and social screening documents and final decision reports.

Based on the screening results and recommendations, the implementing agencies will be responsible to oversee the implementation of the sub-projects including implementation of ES requirements. The federal, regional, and local authorities will participate in the implementation and operation of the sub-projects.

As stated above, various implementing agencies and institutions have responsibilities to manage and complete the overall process of environmental and social management and implementation of this ESMF. In this regard,

- the implementing agencies (MoWE, EDRMC, EMI, MoUDI, and basin offices) will be responsible to oversee the implementation of the overall ES management including implementation of the ESMF.
- regional and local administrations will participate in field level sub-projects identification.
- the implementation agencies will be responsible for developing, preparing, and screening the sub-projects depending on the implementation level (field level sub-projects are processed mainly by the basin offices while the other implementing agencies process sub-projects at national and regional levels). Further, the implementing agencies are responsible to prepare ES instruments based on the screening results and recommendations.
- relevant federal, regional, and local/*woreda* environmental commissions, authorities and offices will be responsible in reviewing and approving screening reports and subsequent ES instruments.
- the implementation agencies are responsible for implementation of the sub-projects including implementation of the ESMF.
- Basin offices, regional, and local administrations will be responsible for operation of the sub-projects including implementation of ES requirements.
- 

The ESMF outlines that the successful implementation of the project activities will require dynamic and multi-disciplinary professionals. Therefore, regular short and tailor-made training courses and workshops will be required to reinforce the capacity and skills of the direct implementers and stakeholders during the entire project period. The existing capacities of the implementing institutions, particularly the *woreda* level, to implement the ESMF and other environmental and social safeguard instruments are low. The project has to, therefore, build their capacities and provide technical support to all relevant implementing agents at national, regional and *woreda* levels to fill the gaps. To implement the ESMF, development and implementation of capacity building and training plan is inevitable. This includes training on various topics that helps to undertaking annual reviews and end-program-evaluation of the impacts of the ESMF. Apart from the allocation of finance, integration and coordination of various actors both at federal, regional and *woreda* levels has of paramount importance for the successful realization of the sub-projects. Timely monitoring, evaluation and follow-up need also be considered in an integrated manner in collaboration with the various role players.

The proposed ESMF process and the procedural steps are more focused on sub-project

identification and preparation of sub-projects ES instruments in addressing relevant environmental and social issues.

The following steps will be followed in the ESMF implementation process.

***Step 1: Identification and Preparation of Sub-projects***

The first step is an important exercise in creating a common understanding and awareness of the procedures involved in the implementation of the ESMF among the key actors. It creates a level ground on which effective working relationships could be built in the implementation process.

For field level sub-projects, the sub-projects are identified by the implementing agencies (mainly basin offices) in consultation with the beneficiaries/communities and local administrations. Then, the sub-projects are developed and prepared by the basin offices including study and design documents. For sub-projects at federal and regional levels, the relevant implementing agency will take the lead in identifying, developing and preparing the sub-projects.

During the early stages of the IDRMP annual plan preparation process, including during sub-project selection and preparation phases, the project focal units and technical committees in the implementing agencies and federal, regional, and local government line bureaus and offices will have to prepare and familiarize themselves with the fundamentals of the ESMF.

The procedures to follow in identifications and preparations of sub-projects include:

**a) Reviewing ESMF and RPF requirements**

The IDRMP focal units (in the implementing agencies) and relevant environmental protection authorities/offices in the regions, zones and *woredas* will have to obtain copies of the ESMF, RPF, as well as all relevant Federal and regional laws, guidelines and procedures relating to environmental protection, cultural heritage and resettlement issues. Members of the technical committees and REPAs will also have to complete training requirements for implementation of the ESMF and RPF. This will help to ensure that there is good knowledge of ESMF and RPF requirements at different levels of administration and at the level of professional and technical staff.

**b) Contacting the federal, regional, local environmental protection commissions, authorities and/or offices**

The next step is to provide the federal, regional, and local environmental protection commissions, authorities and offices with details of the contact of the IDRMP Office including the PMU at MoWE and PCU at EDRMC. The environmental protection commissions, authorities and offices will then be informed of subprojects that are being planned and create awareness on the pertinent

environmental issues in relation to federal and regional environmental legislations.

c) Identifying of sub-projects by the implementing agencies with participation of relevant regional and local administrations and the beneficiaries/communities.

d) The identified sub-projects will be further developed and prepared by the implementing agencies. For field level sub-projects, the basin offices will take the lead in developing and preparing the sub-projects. The MoWE, EDRMC, EMI, MoUDI, and basin offices will prepare other sub-projects to be implemented at national and regional levels.

### ***Step 2: Scoping/Screening, Review, and Approval of Screening Report***

Environmental scoping/screening will be conducted for each sub-project identified and prepared. In order to fulfill the requirements of ESS-1, the environmental and social scoping/screening will be conducted in two stages. During the first stage, the sub-project will be scoped/screened using the scoping/screening form attached in Annex 1 and it will be categorized into one of High, Substantial, Moderate or Low risk. Under the IDRMP sub-components, it is anticipated that the sub-projects will fall under high (due to social risks), substantial, moderate or low risk subproject. If a sub-project falls into High-risk category due to environmental risks, it will be excluded from implementation. Once the subprojects are scoped/screened and confirmed to fall under one of the four risk categories mentioned above, then further categorization will be carried based on the Federal/Regional ESIA procedural guideline screening system to identify the schedule of activities into which the subproject falls (i.e., Schedule I, II & III). Based on the nature and scale of IDRMP subprojects it is expected that most will fall under Schedule II or below (by national/regional ESIA procedural guideline) which may require partial or no ESIAs. In addition to screening done using the national guideline, ESSs are relevant throughout the ES screening and instrument preparation processes.

The environment focal persons in the implementing agencies (PMU, PCU, EMI, basin offices) initiates the process by completing the form contained in Annex 1 (environmental Scoping/Screening Form). The aim of the scoping/screening form is to assist in identifying potential impacts (based on field investigations if necessary) in the area of the subproject site. The scoping/screening exercise should also involve the cultural heritages and resettlement aspects of the subproject. Based on the nature and size of the subproject, the environment focal persons can seek assistance from other members of the implementing agencies while carrying the environmental screening.

This Scoping/Screening Report will describe,

- ✓ The proposed subproject and its potential impacts,
- ✓ Characteristics of the location (sensitivity of the area),



- ✓ Size (small, medium and large scale),
- ✓ Degree of public interest,
- ✓ Institutional requirement, environmental enhancement and monitoring considerations,
- ✓ Categorization of the subproject (Substantial, Moderate, Low risk and Schedule I, II or III)

The outcome of environmental scoping/screening will be classifying the proposed IDRMP subproject into one of Substantial, Moderate, or Low Risk Categories and Schedule I, II or III activities. The completed scoping/screening form will undergo internal checking and approval by the implementing agencies. It will then be submitted to the relevant federal, regional, zonal or *woreda* environmental protection commissions, authorities, or offices with an official application for review and approval.

The environmental protection commissions, authorities, or offices will review the Scoping/Screening Report and will:

- Accept the document - with conditions relating to implementation;
- Accept the documents with required and/or recommended amendments; or
- Reject the document with comments as to what is required to submit an acceptable Screening Report.
- Following the approval of the subproject environmental screening report by the environmental protection commissions, authorities, or offices, the subproject will be fed into one of the following processes based on its approved Categorization.
- Schedule 1 sub-projects are fed into the standard ESIA process and will need to prepare full ESIA study report (mostly unlikely for IDRMP subproject to fall in Schedule I)
- Schedule 2 subprojects will require a partial or preliminary ESIA and will necessitate the inclusion of environmental and social mitigation and enhancement measures in the design and implementation of subprojects.
- Schedule 3 projects are not subject to environmental assessment as no potential impacts are anticipated. Thus, no further action is required. However, a generic ESMP and an environmental guideline for construction contractors will have to be providing in all cases.

The results of the Scoping/Screening Report whether a full ESIA, Partial ESIA, ESMP, or RAP are required - will be included in the IDRMP Project Application Form. Considering the nature, type and scale of IDRMP subprojects, it is most likely that subprojects will fall under Schedule II projects which require preparation of Partial ESIA. The next step in the ESMF process is to proceed to the next actions to fulfill the requirements based on the screening categorization, which is outlined in Step 3 below.

### ***Step 3: ES Instruments Preparation, Review, and Approval***

The text under this step deals with preparation of ES safeguard instruments, and review of the instruments by the concerned authorities. ESS-1 requires independent consultants to prepare ES instruments (such as ESIA) for sub-projects classified as Substantial risks. According to the national ESIA guideline, if the sub project is Schedule I, then it requires a full ESIA which should be prepared by independent consultant (a Schedule I sub-project could most likely be categorized as “Substantial” risk sub-project according to the ESF classification and thus confirms the need for independent consultant to prepare the ES instrument). For the Schedule II sub projects Environmental and Social Assessment could be prepared by the PMU/PCU/EMI/Basin offices or with the help of an independent consultant. Schedule II subprojects are required to prepare “Preliminary” or also otherwise called “Partial”ESIAs in which the depth of its information requirement can be defined in consultation with the relevant environmental protection authority/office.

Generally, the scope of ESIA for schedule II project may vary, but it is narrower than that of Schedule I full ESIA that examines the project's potential negative and positive environmental impacts and recommends measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. Typically, a partial ESIA doesn't require as much (i) policy, legal, and institutional framework analysis, (ii) baseline data, (iii) analysis of alternatives as a full ESIA. It will, however, assess in detail ES risks and impacts, recommend mitigation measures, and include ESMP and monitoring plan. The findings and results of the full or Partial ESIA will be described in the project documentation. Undertaking the preparation of the full/Partial ESIA involves:

- A field assessment of the subproject area to identify likely environmental and social impacts;
- Consultation with beneficiaries and affected communities;
- Preparation of an ESMP or, if necessary, a full or abbreviated RAP

During the study of the full Environmental Impact Assessment and preparation of Environmental Management Plan the environment focal person together with other members of the PMU/PCU and technical committees will have to ensure the quality of the assessment by conducting interim review of draft full/partial ESIA reports. The full/partial Environmental and Social Impact Assessment and Environmental and Social Management Plan will be internally review and approved. The full/Partial ESIA will then be submitted to the relevant environmental protection authority/office with an official application for review and approval. Finally, the full/partial ESIA will be sent to the World Bank for no-objection and further disclosures.

It should be noted that for High-Risk sub-projects, as well as situations in which the client has limited capacity, the client will retain independent specialists to carry out the environmental and social assessment.

The relevant environmental protection commissions/authority/office will review the full ESIA, partial ESIA and ESMPs submitted to it by the implementing agencies. The purpose of review is to examine and determine whether the full/partial ESIA and ESMP are based on adequate assessment of the environmental effects of the IDRMP subproject under consideration and of sufficient relevance and quality for decision-making. Reviewing by the relevant environmental protection authority/office may include considerations of the adequacy of:

- Compliance with the "approved TOR";
- Availability of the required information;
- The examination of alternatives (depending on the type of ES instrument considered), assessment of impacts, appropriateness of mitigation measures and monitoring schemes as well as implementation arrangements;
- The use of scientific and analytical techniques;
- The extent of public involvement and reflection of PAPs concerns; and
- If the report is presented to decision makers at regional, sectoral, and local levels.

The relevant environmental protection commissions/authority/office will review the full/partial ESIA and ESMP and will:

- Accept the document - with conditions relating to implementation;
- Accept the documents with required and/or recommended amendments; or
- Reject the document with comments as to what is required to submit an acceptable ESIA and ESMP.

Moreover, it is also worth to note that the Bank will review the adequacy of national environmental and social requirements relevant to the subprojects and assess the capacity of the client to manage the environmental and social risks and impacts of subprojects. If the Bank is not satisfied that adequate capacity exists on the part of the Client, all Substantial Risk subprojects will be subject to prior review and approval by the Bank until it is established that adequate capacity exists within the client. On the other hand, if the risk rating of a subproject increases to a higher risk rating, the Bank will require the client to apply relevant requirements of the ESSs in a manner agreed with the Bank. The measures and actions agreed will be monitored by the Bank.

The review and approval process of full ESIA report of sub-projects, if there exists under IDRMP, will follow the same procedure with the exception that the scope is broad encompassing broad range of environmental issues that will have significant environmental and social impact on the community and the environment.

#### ***Step 4: Sub-projects Implementation and Supervision***

When approval has been given to the partial ESIA/ESMP, CHMP, or RAP implementation of mitigation measures and systemic follow-up is needed for the sub-project. Monitoring the compliance of IDRMP subproject implementation with the mitigation measures set out in its ESMP and RAP will be carried out by the environment and social focal person of the PMU/PCU/EMI/basin offices who is responsible for environmental and social management. The PMU/PCU/EMI/basin offices and in particular the environment focal person will have the primary responsibility for carrying out this monitoring by regularly visiting the subprojects, and advise corrective measures to the contractor as required.

The implementation of the recommended mitigating measures will also be monitored by the regional, zonal, and/or woreda environmental protection authority/office and internal M&E monitoring unit of IDRMP from time to time. The PMU/PCU environment and social focal person will have to collaborate in the planning for external compliance monitoring inspections that will be conducted by the relevant environmental protection authority/office. The planning for external compliance monitoring/inspection could be initiated by the relevant environmental protection authorities/offices.

Compliance monitoring comprises on site-inspection of construction activities to verify that measures identified in the ESMP and RAP and included in the clauses for contractors are being implemented. Compliance monitoring and supervision of the ESMP covers:

- determining whether the project is being carried out in conformity with environmental safeguards and legal agreements;
- ensuring that the anticipated impacts are maintained within the levels predicted,
- identifying problems as they arise during implementation and recommend means to resolve them;
- seeing that the un-anticipated impacts are managed and or mitigated before they become problems,
- recommending changes in project concept/design, as appropriate, as the project evolves or circumstances change; and
- realizing and optimizing the benefits expected, and
- Providing information for a periodic review and alteration of the environmental management plan and enhance environmental protection through good practice at all stages of the project.

It is, therefore, necessary that Environmental and Social Management Plan, Cultural Resources Management Plan or Resettlement Action Plan is regularly supervised, monitored and reported to regional environment office, the implementing agencies and the WB together with other progresses of the subprojects.

### ***Step 5: Environmental and Social Safeguards Compliance Evaluation Phase***

Once implementation of the IDRMP subproject has started, regular supervision missions should be carried out by the PMU/PCU/EMI/basin offices and the regional environmental offices on a quarterly, biannual and annual basis and environmental and social safeguards compliance reports must be prepared and submitted to the environment region offices, the implementing agencies and to the WB for review and guidance.

The purpose of these reports is to provide:

- A record of IDRMP project activities, experience and issues running from year-to-year throughout the IDRMP that can be used for identifying difficulties and improving performance; and
- For providing formation for undertaking an annual review.

### ***Step 6: Annual Review and Audit Phase***

ESMF implementation will also be supported by conducting annual environmental and social performance audit (including audit of implementation of ESMPs and/or RAPs) that will be carried out by a third party. The third-party annual environmental and social performance audits will be conducted for the IDRMP to evaluate the overall implementation of the ESMF. The annual environmental and social performance audits will be considered to be the principal source of information for improving environmental and social performance, and to Bank supervision missions. It is expected that these reviews will be carried out by an independent local consultant or other service provider that is not earlier involved in the formulation of the Project. The purpose of the reviews is of two-fold:

- to assess compliance with ESMF procedures, learn lessons, and improve future ESMF performance; and
- to assess the occurrence and potential for cumulative impacts due to this Project and other development projects.

## **6.2 Information Disclosure**

The Basin Development Authority will make copies of the ESMF available in selected public places (possibly at National and Regional relevant government offices) for information and comments. The Proposed project activities will be announced through different forms of media. The announcement will include a brief description of the project references as to where and when the ESMF can be viewed, duration of the display period, and contact information for comments.

For meaningful consultations between the project owner and local NGOs on all High and Substantial risk sub-projects, Basin Development Authority shall provide a relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

### **6.3 Public Disclosure Plan**

Following the public consultation, all comments and briefs will be analyzed and report will be published and made available to the relevant stakeholder's and to interested bodies upon request. In line with this, the ESMF will be available at the relevant institutions at all levels and be publicly disclosed both in the relevant country offices and at the World Bank's website. Copies of consultation reports should be made accessible through public relation sections of relevant sector line ministries, radio announcement and press releases.

Any ESMPs and other safeguards instruments that will be prepared for the proposed sub-projects will also needed to be disclosed to the public. Copies of the ESIA's and ESMPs should be made available to communities and interested parties in accessible locations through local government authorities, (e.g. *Woreda* offices). Similarly, copies of the ESMPs should also be provided to the implementing agencies. This will ensure record keeping of all activities implemented under the ESMF and ensure that third party audits, if required, have adequate information when undertaking annual environmental and social audits at a later stage of project completion. It is also important the local disclosure should be in an accessible language to population.

#### ***Disclosure of Documentation***

The World Bank policy on the disclosure of documents adopted the principle of "presumption of full disclosure" The sharing of draft and final ESIA's and other relevant documents with project stakeholders and interested parties will be subject to the above-mentioned principle. As such, the documents will be disclosed, when available, in a timely manner prior to project appraisal at the quality assurance stage on World Bank Website and in an accessible place or at the project-affected area, in a form and language understandable to project-affected parties and other stakeholders, for the purposes of keeping them informed and providing them meaningful feedback about the project.

## **7 Potential Environmental and Social Impacts and Recommended Mitigation Measures**

### **7.1 Positive Impact**

#### ***7.1.1 Potential Positive Social Impacts of the Flood Control Subprojects***

##### ***Minimizes and/or Prevents Downstream Flooding***

Flooding is a recurrent phenomenon particularly at the height of the rainy seasons, for instance, in the Middle and Lower Awash valleys of the Basin. This has been causing untold damage over the years to human life, animals and property. Flood control projects like dykes will thus greatly reduce or prevent the incidences of flooding mainly in the downstream areas.

##### ***Minimizes or Prevents Damages to Institutions***

Damages to institutions is said to be another dimension of the consequences of flooding, and again this problem seems to be widely observed in downstream areas of a river basin. As a result of flooding, social infrastructures such as schools, health centers, farmers training centers and others are damaged, resulting in non-functioning of the facilities. Therefore, flood control and protection projects minimize and/or prevent the impacts by avoiding overtopping and directing the river downstream.

##### ***Reduces Health Problems and Health Care Expenses***

Infectious diseases are diseases caused by micro-organisms. These are microscopic organisms, such as bacteria, viruses, fungi, or parasites. They can sometimes be caught from other people, the environment, from animal contact, or from insect bites. Malaria, for example, is the first of the ten top infectious diseases in the Awash River Basin area. Flooding aggravates the problem of malaria infection by creating stagnant water where the disease-causing mosquito lurks and breeds. Flooding also results in the deterioration of health condition owing to waterborne diseases. By avoiding or minimizing flooded areas through flood control and protection projects, the expansion of infectious and water-based diseases will greatly be minimized or avoided. Also, flooding could cause contamination of drinking water supplies if there is a path for flood water to enter the water supply system. Also, flooding aggravates transports of contaminants from source to receptors. The planned flood protection measures will avoid or reduce potential contamination of drinking water and associate health hazards. This, in turn, promotes the health and wellbeing of the inhabitant in the area, and thereby lowering health-related expenses for treatment.

##### ***Avoids Losses in Businesses***

Flooding negatively affects the smooth functioning and running of business ventures. Besides causing damage and destruction to the business itself, it hurts the infrastructure, communication and related services of the business institutions. Flood control dyke construction will come to the

rescue of such devastating effects on businesses and associated activities

### ***Safeguards the Subsistence-based Livelihoods of Inhabitants***

Flooding damages the livelihood and economic activities of people and disrupts the subsistence production system particularly of small holder farmers and pastoralist. Flood protection and control projects like dykes create the opportunity for farmers and livestock herder to continue producing safely their own subsistence as well as for market and thereby augment their income by engaging in a bundle of supplementary activities.

### ***Avoids Community Displacement***

Frequent flooding, resulting in loss of livelihoods, production and other prolonged economic impacts and sufferings can trigger mass migration or population displacement. For example, recurrent flooding of the Awash River has been displacing communities in the Middle and Lower Awash Valleys. During such displacements, losses of human life, damage to property, and destruction of crops have occurred. Migration to developed urban areas contributes to the overcrowding in the cities. These migrants swell the ranks of the urban poor and end up living in marginal lands in cities that are prone to floods or other risks. Therefore, flood control and protection project serve as a means to curb the magnitude of such problems. A dike in particular is a good method of flood protection, and a dike lowers the risk of having floods compared to other methods. It can help prevent damage and proves to be more effective when it is combined with other flood control methods to reduce the risk of a collapsed dike.

### ***Creates Job Opportunities***

One of the main positive impacts during project construction and operation phases is the employment opportunities that will be created especially to casual workers and several others. Employment opportunities are of benefit both socially and economically to women and unemployed youths in the rural settings. In economic sense, it means a number of skilled, semi-skilled and unskilled local inhabitants and other citizens coming to project sites seeking for jobs could obtain gainful employment opportunities during construction and operation phases of the project.

### ***Promotes Good Governance, Equity and Inclusiveness***

The notion of good governance centers on the responsibility of governments (local and national) and governing bodies to meet the needs of the masses and empowering them as citizens, as opposed to selected groups in society. Ineffective flood risk response and associated services during major flood events may lead to public discontentment and loss of trust in the authorities of the state and national and local governments. Lack of socioeconomic development in flood-prone areas may cause social inequity and this may cause even social unrest, posing threat to peace and stability in the region. Therefore, addressing the welfare and safety of citizens is one of the major factors promoting the competence of a government in managing and administering of its citizens. Thus, implementing flood protection and control activities in flood prone area will have significant



contribution for promoting trust and amicable relationship between the government and resident.

## **7.2 Potential Environmental Impacts and Risks and Recommended Mitigation Measures**

### **7.2.1 General**

The main environmental risks and impacts anticipated during the implementation and operation of the sub-projects are impacts on aquatic and fishery habitats that area accustomed to natural flood cycles and due to elimination floodplains, wildlife movement restriction due to hydraulic structures and material source utilization, reduction of groundwater recharge, erosion and sedimentation due to channel modifications resulting in deterioration of river water quality, aesthetic and ecological impacts due to paving or river courses, risk from disposal of dredging spoil, risk of downstream flooding from hydraulic structures, and environmental pollution during construction of flood control structures.

Considering these and other relevant impacts the environmental risk rating of the project is Substantial. The overall environmental and social risk rating of the project is **High** based on the revised Appraisal ESRS.

The following sections provide details of the anticipated main environmental impacts during sub-projects implementation and operation. Further, mitigation measures are recommended for the identified impacts. The mitigation measures recommended in this ESMF shall be further updated before sub-projects implementation in the sub-project specific environmental and social instrument to be prepared following the screening process. The mitigation measures shall be consistent with the mitigation hierarchy, i.e., (a) anticipate and avoid risks and impacts; (b) where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) once risks and impacts have been minimized or reduced, mitigate; and (d) where significant residual impacts remain, compensate for, or offset them, where technically and financially feasible.

### **7.2.2 Project Impact during Construction Phase**

#### ***Noise and Vibration Impact on Wildlife and Proposed Mitigation Measures***

Noise and vibration are caused by operation of heavy construction machineries and equipment including pile drivers, earth moving and excavation equipment, concrete mixers, lifting machines, and transportation of equipment, materials and people. Noise and vibration impact on the immediate receptors, in this case, on the wildlife residing in the sub-projects influence areas will be significant and wildlife may be forced to migrate from their habitat. Wildlife use noise and vibration to navigate, find food, attract mates, and avoid predators, Therefore, in addition to being a nuisance to the wildlife, excess noise and vibration could affect communications, mating

behaviors, hunting and survival instincts. Some wildlife is known to exhibit sickness from high pitch noises due to increased heartbeat, high blood pressure, and altered metabolism. The Awash, Rift Valley Lakes, and Omo-Gibe basins where the sub-projects will be implemented have parks and protected area and implementation of the sub-projects in these environments could pose a risk on the wildlife due to noise and vibration.

The following mitigation measures are recommended to minimize noise and vibration impact:

- Avoid using heavy construction machinery during night-time
- Carry out regular maintenance on the construction machineries
- Select transport routes to minimize noise pollution in sensitive areas
- Use non-mechanized construction where possible including the use of local labor
- Install noise silencer on the construction machineries
- Select sub-project sites away from wildlife habitat during sub project screening.

### ***Impact on Air Quality***

Frequent movement of vehicles for delivery of construction materials to construction sites will generate a lot of dust especially during the dry seasons. Most of the project construction sites are expected to be remote and are accessed by gravel roads and dirt tracks. Vehicles transporting construction materials on these roads will generate dust especially during dry seasons. Also, operation of construction machineries and most construction activities are expected to release dust in to the ambient air. Moreover, exhaust gases released from the construction machineries will cause the surrounding air quality to deteriorate. The main air pollutants expected during construction and transportation activities are particulate matter (PM10, PM2.5), nitrous oxides (NOx), carbon monoxide, carbon dioxide, sulfur dioxide, and ozone. Due to extent of generation, particulate matter is a critical pollutant and it could result in respiratory organ disease and in prolonged exposures it could result to permanent damage of respiratory organ (such as lung cancer, asthma, Silicosis, and chronic obstructive, pulmonary disease). Therefore, deteriorated air quality will pose a significant health impact on sub-project workers and local communities.

The following mitigation measures are recommended to minimize impact on air quality:

- Regularly (multiple times in a day where necessary) spray water to suppress the generation of dust during construction, particularly during use of gravel roads and dirt tracks.
- Cover with mulch and vegetation where applicable.
- Use local labor when widening river channels by excavating river banks;
- All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and with proper maintenance to minimize air pollution;

### ***Impacts due to Construction Camp Site and Other Ancillary Facilities***

During construction period, there are different adverse impacts emanating from construction of ancillary facilities, such as camp site, storage areas, garages, etc. These impacts will be induced soil erosion and sedimentation leading to subsequent deterioration of water quality, dust, and noise pollution, respiratory illnesses related to dust pollution, compaction of soil, traffic accident on local community and workforce, solid waste (household wastes & spoil material), competition for electricity, land use change, disfiguring of landscape, spillage of oils, lubricants and other chemicals. Thus, there could be adverse impacts stemming from inappropriate management of waste disposal, air pollution, competition for water and electricity around these camp sites and ancillary facilities.

To minimize the impacts, the following measures can be considered:

- Locate construction camps away from environmentally, socially, and culturally sensitive sites.
- Locate construction camps away from local communities' settlement areas, villages, and towns.
- Get the local authorities' concurrence in locating construction camps.
- Provide amenities in the camp.
- Provide potable and reliable water supply for the camp.
- Provide reliable and sufficient energy supply to the camp.
- Provide proper waste storage area or facility.
- Provide sufficient ingress and egress from/to the camp with internal roads and storm drainage structures.
- Provide reliable health care facility in the camp.
- Provide around the clock security personnel to prevent unauthorized entrance to the camp.

#### ***Impact due to Borrow Pits and Quarry Sites***

Utilization of construction materials from borrow pits and quarries will result in extensive land disturbance including removal of the original ecosystem at and around the borrow pits and quarries, alternation of the original topography including drainage patterns, ecological relationship will be irreversibly changed, and the biodiversity is reduced and their movements restricted. Further, unrehabilitated or open borrow pits and quarries will aggravate erosion, siltation of water bodies, permanent aesthetic intrusion/scarring, and results in community health and safety risks. Construction of some of the sub-projects (such as micro-dams, embankments, and dikes) will require large volume of borrow fill materials and rocks. Further, access road construction to sub-project sites (if required) will entail use of large volume of fill materials.

The following mitigation measures are recommended for impact due to borrow pits and quarries:

- Locate borrow pits and quarry sites away from settlement areas and important habitats

- Select low-impact materials extraction methods that will make rehabilitation of the site easier
- Topsoil and overburden should be removed separately and segregated for later use during site rehabilitation
- Rehabilitate the pits and quarry sites to their natural ground level to minimize impact
- Opportunities to create ecologically valuable habitats should be considered at the borrow pits and quarry sites.

### ***Impacts due to Construction Wastes***

Construction wastes include surplus and discarded materials from site clearing, excavation, construction, and demolishing. Wastes generated by associated construction activities such vehicle lubricants and containers, oil filters, solvents, fuel, and other wastes from construction camps, garages and stores can also be considered as construction wastes. For flood protection/control sub-projects under the project, it is expected that large volume of surplus materials from clearing, excavation and fill work will form the major portion of construction waste generated. Also, surplus/discarded concrete, aggregates, reinforcement bars, pipes, etc. are expected from some of the construction activities.

To minimize pollution due to wastes generated from project construction sites, the following mitigation measures can be considered:

- Wastes have to properly transported and disposed to officially permitted and properly manage site
- Provide segregated waste receptacles within construction camps or storage areas
- Segregate and store hazardous waste in containers or specialized leak-proof plastic bags
- Provide spill containment storage volume
- Dispose hazardous materials only at designated disposal sites/facilities (if any) with permission from the concerned authorities
- Never dispose used oil and filters to the ground, use leak proof containers
- Provide Material Safety Data Sheet (MSDS) at the hazardous materials storage at all times
- Aware the construction crew and operators on proper handling of hazardous materials
- Use appropriate PPE while handling hazardous materials
- Develop emergency spill or exposure procedures
- Vehicles hauling construction debris or other waste from the sub-project sites shall cover any open load with a tarpaulin or other secure covering to minimize dust emissions and dropping of debris.

### ***Impact of Construction on Soil Quality***

Construction of micro-dams, retention ponds, embankments, dykes, levees and the modification of river channels will adversely affect the quality of soil. Construction activities at sub-project sites

will result in the mixing and compaction of soil layers thus disturbing natural soil structure and reducing the ecological function of the soil. Earthwork (cuts and fills), compacted fills and hydraulic structures modifying surface water and groundwater movements, compaction of soil due to movement of machineries and vehicles, and erosion of exposed soils/slopes due to clearing are some of the causes and impacts on soil quality.

The following mitigation measures are recommended to minimize impact on soil quality.

- Restore the nutrient rich top soil to its original level upon completion of construction works
- Top soil stripped should be stockpiled for rehabilitation of the area later
- The topsoil should be uniformly spread onto areas to be rehabilitated
- Provide temporary drainage channels and retention ponds in cases there is a danger of increased runoff that will aggravate soil erosion
- Access roads should be located from fertile grounds and should be rehabilitated once their use is completed
- As much as possible, use existing access roads
- Vehicles should not drive on soil when it is wet to avoid further soil compaction.

### ***Impact on Surface Water Resource***

Construction work within or adjacent to watercourses have the potential for reducing water quality due to increased sediment load. Sediment load in surface water resources exceeding the natural sediment load will result not only in deteriorated water quality but also reduces the flow carrying or storage capacity of the surface water bodies by reducing available area of flow or storage. This in turn modifies the surface water hydrology. Therefore, most sub-projects construction activities, if not properly managed, could result in surface water related impacts. Any construction activity that results in soil erosion will ultimately result in sedimentation of receiving water bodies. For instance, widening and deepening of river courses during river training work will increase sediment yield downstream. Clearance of river side vegetation will also result in increase of river water temperature which may result in the changes of the river ecology. Contamination of surface water will occur due to spillage, leakage of chemicals and oils and other hazardous materials used for the maintenance of construction vehicles at the construction sites.

The following mitigation measures are recommended to minimize project impact on surface water resources.

- Maintain controlled flow in rivers and streams to allow downstream movement of water, sediment, and other transported materials that form the natural surface water system
- Construction wastes, other debris and oil spills shall be prevented from entering the nearby drainage system;
- Protect water body ecosystem by properly managing construction wastes that will be

generated during project civil works;

- Provide secondary containment to hold on accidental spillage and prevent it from entering nearby water bodies and soil. The secondary containment should have the capacity to match or exceed the volume of fuel, solvents, and other materials to be contained.
- Use a proper fueling nozzle or funnel to avoid splashing fuel during filling of vehicles and machines.
- During filling of vehicle/machine tanks, monitor the progress of the filling so that it will not spillover. Also, let the nozzle or funnel drain before pulling out.
- Develop emergency response work instructions to manage accidental oil and chemical spills.

### ***Impacts due to Channel Smoothing and Clearing Riverine Vegetation***

River channel smoothing and clearing riverine vegetation will reduce the roughness of a river (Manning's roughness) and increase the available cross-sectional flow area of the river. This will result in increased flow of runoff/flood and ultimately in enhanced capacity of the rivers to carry/convey floods. On the other hands, smoothed rivers and cleared aquatic vegetation will eliminate or affect aquatic habitats. Aquatic vegetation is often a source of food and oxygen for many aquatic animals (microorganisms, vertebrates, and invertebrates). Unsmoothed river courses and aquatic vegetation provide spawning, nursery, refuge, and foraging areas for many aquatic organisms. Thus, river channel smoothing and clearing of riverine vegetation will adversely affect aquatic organisms and fisheries by disrupting or eliminating their habitats. Most of the sub-projects will be implemented in, across, along or close to surface water bodies such as rivers. As the main objective of the project, river channel modification will be done to increase the flood conveying capacity of rivers and streams. Therefore, associated impacts indicated are expected during implementation of the sub-projects.

The following mitigation measures are recommended to reduce the impacts of river smoothing and clearing riverine vegetation:

- Aquatic organisms and fishery habitat along the river course should be carefully identified and these types of activities on the identified sites should be minimized.
- Minimizing removal of native plant species or riverine vegetation.

### ***Impact on Soil and Groundwater due to Disposal of Dredging Spoils***

Dredging involves removal of accumulated silt or sediment from a river course or lake/pond with the aim of increasing the flow/water carrying and conveying capacity of the water body thereby decreasing flooding risks. Dredging spoil/waste is composed of different size grains (from silt to large solids) and hazardous compounds such as heavy metals (mercury, lead, zinc, copper), arsenic, hydrocarbon compounds, etc. Physical and chemical composition of dredging waste is governed by the hydrogeology of the catchment, vegetation of the catchment, and historical

anthropogenic contaminants release in to the river system. It is, therefore, very important to carefully select how dredging waste is temporarily stored, transported, and disposed since it has environmental consequences on soil and groundwater. If the dredging waste has hazardous compounds, then it will entail contamination of soil and groundwater which in turn affects flora, fauna, and people's wellbeing and health. Dredging wastes also have a sludge and leachate components which have their own impacts on the environment. For instance, the leachate part is more susceptible for soil and groundwater contamination since it can seep through the soil easily. Further, it can carry and transport hazardous compounds from source to receptors.

To minimize the impact on soil and groundwater due to disposal of dredging spoils/wastes, the following mitigation measures are recommended:

- Identify the physical and chemical composition of the dredging waste before removal.
- Based on the physical and chemical composition of the dredging waste, identify appropriate removal and temporary storage methods and locations.
- When transporting dredging waste to disposal site, care shall be taken to use a leakage free method so that dredging leachate will not escape.
- The contractor should dispose the dredged spoils on a site dedicated for this purpose and officially permitted.
- The contractor should liaise with the concerned local authorities to aware them of the risks/impacts of the dredging waste and assist them (if needed) in selecting and preparing appropriate disposal site, depending on its contents.

### ***Impact on Flora***

Clearing of vegetation for construction of embankments, micro-dams, dikes, retention ponds, and other structures across rivers, streams and drainage channels will result in the loss of vegetation cover and flora species of biodiversity importance. Flood retention structures will take land for the structure themselves and for impounded water behind the structures. Some sub-projects could temporarily take up considerable land for reservoir impoundment. Also, as indicated in the earlier section, clearing of riverine vegetation to increase flood carrying capacity of rivers and drainage channels will result in loss of the aquatic flora and fauna species.

To minimize impacts on flora, the following mitigation measures are recommended:

- Survey of sub-project areas shall be done by agricultural specialists (or botanists) prior to construction to identify, protect, or relocate endangered plan species.
- Embankment construction, modification of rivers channels, and other interventions on a known areas of biodiversity significance such as parks and natural reserve areas should be avoided or minimized.
- Plant indigenous trees in open spaces, along river banks, and/or other disturbed areas

- Monitor for any unusual or invasive aquatic species and remove such species when seen.

### ***Impact on Terrestrial Fauna***

The river banks where micro-dams, embankments dikes, retention ponds and river training work are planned to be constructed could be important wildlife habitat. This is specially so when the river crosses national parks and wildlife reserves such as in the Awash, Rift Valley Lakes and Omo Gibe basins. Construction in these flood control structures will disturb wildlife habitat, force them to migrate from these important wildlife habitats and also hinder their free movements.

The following mitigation measures are recommended to minimize the impact.

- Identify wildlife habitats and avoid construction of flood control measures in or near the identified habitats;
- Provide alternate passage for important wildlife habitats to ensure free movement of wildlife
- Design and construct wildlife access to avoid or minimize habitat fragmentation.

### ***Impact on Aquatic Fauna***

Aquatic fauna includes microorganisms, vertebrates, and invertebrates. As indicated in earlier impacts, modification of river and drainage channels (such as smoothening river channels, clearing aquatic vegetation, sedimentation, and dredging) will alter the aquatic habitats on which the fauna depends for breeding, food, and shelter. Further, temporary storage of water behind flood control structures (micro-dams, embankments, retention ponds) will restrict movement of aquatic fauna and affect their eating and breeding patterns.

The following mitigation measures are recommended to minimize the impact of sub-projects implementation on aquatic fauna:

- Identify and avoid implementation of sub-projects in important aquatic habitats.
- Consider providing structures that allow movement of aquatic fauna such as fish ladder.
- Where practical, consider restoration of aquatic habitats upstream or downstream of the flood protection structures and replenish with the aquatic species available before sub-projects intervention.
- Monitor for any unusual or invasive aquatic species and remove such species when seen.

### ***Impact on Threatened Fauna***

Construction of embankments, micro-dams, dikes, retention ponds, levees, and modification of river courses could be in areas where threatened wildlife exist. Also, construction material sources (borrow pits and quarries) and access roads could be located in areas of significant flora and fauna genetic resources. Vegetation clearing, flood control structure and storage sites could take up



wildlife habitats. Further, river channel modifications and reduction/elimination of floodplains could affect aquatic fauna of significant biodiversity importance. The baseline assessment in this ESMF shows that some wildlife with endangered or critically endangered status are available within the project sub-basins. This includes African wild ass, East African oryx, Grevy's zebra, Swayne's Hartebeest, elephant, Lelwel hartebeest, African wild dog, and black rhinoceros. Most of the planned sub-projects and associated activities could affect the habitats where these threatened faunae reside.

To minimize sub-projects impact on genetic resources, the following mitigation measures are recommended:

- During sub-project planning, consult or involve the local agricultural offices and the regional/zonal biodiversity office to identify important biodiversity and genetic resource in the sub-project influence area.
- Construction of embankments and modification in rivers course reach of biodiversity and genetic resource should be avoided to the extent possible.
- Reduction and elimination of floodplains should be avoided to the extent possible to protect habitats of threatened aquatic fauna.
- Consider re-populating the affected biodiversity and genetic resource in close consultation with the concerned regional and local bodies.

#### ***Impact due to Inefficient Energy Use and Management***

Flood control structures construction will entail use of vehicles, heavy machineries, and other equipment which require energy from fossil fuels or from the national electric grid. Unless an efficient energy use and management is practiced, it will result in wastage of energy that could have been used for other purposes and resource exploitation. Also, the use of fossil fuels results in release of carbon to the atmosphere.

The following mitigation measures can be considered:

- Implement effective energy management system during construction work
- Operate energy intensive machines and plants at the lowest level possible
- Ensure efficient operation of machines and systems so that energy loss from leaks and other failures can be avoided
- Periodically check and evaluate the efficiency of energy systems and where necessary replace problem components so that energy loss due to ageing of components can be avoided
- As much as possible, reduce the overall carbon footprint of the construction work

### ***Impact due to Inefficient Water Use and Management***

During implementation of the sub-projects, inefficient water use and management will result in wastage of the resource that would have been available for other uses and beneficiaries. Water could be wasted during fetching, transporting, and use in various construction activities and at construction camps and garages. Some of the sub-project construction activities such as fill and compaction of embankments, dikes, retention ponds, and levees will require large volume of water to achieve the optimum moisture content of the fill during compaction. Extracting of large volume of water from surface water or groundwater resources is expected to reduce available water for local and downstream users. Also, concrete water (for which better quality water is often used) could utilize the local communities water source, resulting on conflict of interest.

The following mitigation measures can be considered:

- Implement effective water management system during construction work
- Implement water conservation measures
- Ensure the proper sealing of all storage structures to avoid water loss
- Avoid using the local communities' water sources

### ***7.2.3 Project Impact during Operation Phase***

#### ***Impact on the River Regime and Aquatic Habitat***

Sub-project activities such as channel smoothening, channel straightening, clearing of aquatic vegetation, dredging, paving of waterways, and widening of river courses will result in modification of river regimes/hydrology and associated habitats. Further, floor protection/retaining structures to be constructed (such as micro-dams, embankments, dikes, retention ponds) will temporarily hold flood thereby changing the natural hydrological cycle of the rivers/streams. Aquatic habitats are used to and function with the natural river regimes and any changes to it will adversely affects the habitats. Therefore, river regime modification is expected to disruption fishery and other aquatic species by eliminating channel irregularities and by changing the natural flow regimes. Channel irregularities provide spawning, nursery, refuge, and foraging locations for aquatic organisms. Aquatic organisms are accustomed to the natural river regime and changes to it will affect their breeding and foraging patterns.

The following mitigation measures are recommended to minimize impact on river regime and aquatic habitats.

- As much as possible, avoid modification of river courses or regimes identified as a breeding site for fishery and aquatic species.
- As much as possible, avoid modification of river regimes in areas where recession agriculture and grazing are practiced by the local communities.

- Allow sufficient opening or waterway to allow movement of aquatic species
- Allow controlled flood or release of water to replenish aquatic habitats
- Compensate loss of aquatic species through re-introducing the lost aquatic species
- Monitor for any unusual or invasive aquatic species and remove such species when seen.

### ***Impact on Groundwater Resource***

Floodplains slow movement of flood and temporarily store flood water. This will allow recharge of the local aquifers, particularly shallow unconfined aquifers. Groundwater stored in the floodplains during wet seasons will be discharged to rivers during dry periods. This replenishment of the river system will allow groundwater-surface water interaction (recharge-discharge). Floodplains, therefore, serve as important sources for surface waters during dry periods. Reclamation of the floodplains and construction of flood protection structures such as dikes and embankments will reduce or eliminate floodplains which in turn results in reduction of groundwater recharge and discharge. Introduction of drainage channels in the flood plains is expected to reduce or eliminate floodplains which in turn affects groundwater levels and recharge.

The following mitigation measures are recommended to minimize impact on groundwater resource.

- Avoid elimination of floodplains, particularly in areas (including downstream areas) where groundwater resource is limited or in use.
- Carry out soil and water conservation programs at the upper catchment to compensate the reduction in groundwater recharge due to elimination of the floodplains.
- Release (if necessary, frequently) controlled downstream flow to enable groundwater recharge
- Consider artificial recharge of groundwater in areas where flood control measures are implemented to replenish the groundwater.

### ***Impacts due to Reduced or Eliminated Floodplains***

Floodplains provide a number of biological and socio-economic benefits. Floodplains provide natural storage of flood which can be used during dry periods. Floodplains recharge shallow unconfined aquifers. Floodplains maintain quality of water through allowing sediments and debris to settle before reaching the main water bodies, i.e., rivers and streams. Flood plains directly or indirectly support aquatic habitats. Floodplains have both the aquatic and terrestrial nature and are important sources of nutrients for large species of fish and other aquatic wildlife. Floodplains are often used for recession agriculture and many communities' livelihoods depend on them. Floodplains create recreational opportunities because of their scenic value and support of aquatic wildlife. Floodplains provide invaluable resources for scientific research and education. Flood control sub-projects such as construction of embankments, dikes, micro-dams, drainage channels,

channel modifications, and dredging will reduce or eliminate floodplains, depriving some of the benefits listed above from the local environment.

The following mitigation measures are recommended to minimize the impact of reduced or eliminated floodplains:

- Avoid completely drying up or eliminating floodplains so that the natural flood cycles could be maintained
- Water drained out and released from flood plain should be temporarily stored in retention ponds and reused.
- Compensate loss of aquatic species through re-introducing the lost aquatic species
- Restore alternative aquatic habitats for endangered species (if any).

### ***Impacts due to River Channel Modifications***

River channel modification sub-projects such as river bed deepening, river bank widening, straightening and smoothening river bed (including dredging) will increase velocity of the river flow and aggravate soil erosion downstream. River channel modifications will provide increased flood conveyance capacity of rivers which results in draining of floodplains and wetlands. Channel modifications cutoff meanders and oxbow lakes which support aquatic wildlife. Channel modification such as deepening of river bed will lower groundwater table and reduce groundwater recharge-discharge from and to rivers. Channel modifications will pose a risk of flooding for downstream communities and areas since more flood is transferred from the intervention areas. River channel modifications reduces the size, number, and species diversity of fishes and other aquatic wildlife.

The following mitigation measures are recommended to minimize impacts due to river channel modifications:

- Planting grass on the river side and plug gullies by gabions to minimize soil erosion and sedimentation;
- Remove sediment from river beds before it is deposited in the hydraulic structures;
- Construct water tight cut off walls along the river side to minimize ground water lowering as a result of deepening of the river bed
- Consider artificial recharge of selected aquifers to replenish the groundwater
- Design and construct the flood protection structures considering their most minimal effects on existing livestock and crop production and other community livelihood sources.
- To avoid affecting the livelihood of the community, locate flood regulating structures where existing irrigation water intake exists.

### ***Impacts due to Paving of River Channels***

Paving of river channels to reduce or eliminates factors that retard flow can pose many aesthetic

and ecological problems, including a reduction of groundwater recharge and disruption of aquatic populations. Some of the sub-projects will involve river channel modification which includes paving of river channels (particularly near or around other hydraulic structures) to reduce the roughness of the river and enhance its flood conveyance capacity. However, such interventions will have impacts such as preventing groundwater-surface water interaction, i.e., recharge and discharge. Further, it will eliminate channel irregularities that are critically important to support aquatic wildlife. Paved river channels disrupt the scenic nature of rivers thereby reducing their aesthetic values.

The following mitigation measures are recommended to minimize impacts due to paving of river channels:

- Avoid paving of river channel on the river stretch of ecological value, risk of flooding downstream, geological features suitable for groundwater recharge, and aesthetic value.
- Consider flood speed control measures downstream of the structures
- Consider artificial recharge of selected aquifers to replenish the groundwater.

#### ***Impact due to Increased Flood Risks Downstream***

River channel improvements, micro-dams, levees and dikes constructed upstream are expected to increase flood risks on communities and wildlife habitats downstream. Flood reducing measures and control structures to be constructed at sub-project intervention sites will convey or store flood that would have followed its natural course. River channel modifications will enable conveyance of more flood water from the intervention area to downstream. Reduction or elimination of flood plains will entail conveyance of flood that would have been captured or slowed by the floodplains to downstream areas. Hydraulic structures to be constructed across rivers (such as micro-dams and retention ponds) will hold large volume of flood water. These hydraulic structures will pose a risk of downstream flooding in case of structural failure.

The following mitigation measures are recommended to minimize flooding risk downstream:

- Sub-project feasibility studies and ESIAs should include hydrological modeling and risk assessment for the catchment or sub-basin and provide designs that address downstream flooding risk.
- River modification and flood control structures should not be made on river stretches that will endanger communities, structures, parks and wildlife habitats
- Consider flood control structures that can avoid/reduce downstream flooding without significantly compromising the river flow regimes.
- Periodically inspect the structural integrity and soundness of the hydraulic structures, particularly those retaining water

- Implement safety measures designed by qualified engineers
- Consider flood speed control or energy dissipation measures downstream of the structures
- Flood risk warning systems should be established
- People in flood prone areas downstream should be regularly informed prior to the flood event and people should be advised to evacuate to a safer location
- Hydrological station network along the river course should be established to collect information on the river flow
- Forecast possible flood risks and communicate this information to people in the flood prone areas downstream to minimize risk.

### ***Impact of the Introduction of Hydraulic Structures on the River Water Quality and Quantity***

Hydraulic structures such as micro-dams, drainage channels and retention ponds will be constructed as part of the project. These structures will have impact on the river water quality. Construction of drainage channels to remove water out of floodplains is expected to influence the river water in terms of quality and quantity. Introduction of the drainage system in floodplain will increase river flow downstream. Floodplains slow and store floods which allow sediments to settle which increases water quality. Similarly, water on floodplains that will be drained in to the river downstream could be saline water and this will affect the river water chemistry. Also, invasive weed species grown in floodplains may enter into the reservoirs, causing eutrophication. Flood control structures will greatly affect the quantity of water available in space and time at the sub-projects' intervention and downstream areas. It will reduce floods from the intervention areas and transfer them to downstream areas.

The following mitigation measures are recommended to minimize the impact of hydraulic structures on river water quality and quantity:

- Implement catchment protection and watershed management to reduce sediment load trapped by the hydraulic structures
- Deterioration in river water quality due river eutrophication can be minimized by controlling fertilizer input on farmlands upstream
- Planned hydraulic structures should allow controlled but constant flow downstream.
- Minimize river eutrophication through controlling fertilizers input upstream.
- Monitor quality of water upstream and downstream of the hydraulic structures.
- If necessary, increase the frequency of release of water from the structures

### ***Cumulative Impacts***

The proposed sub-projects may individually have manageable adverse environmental impacts. However, several sub-projects in combination could have significant cumulative impacts. Further, other water resources development projects maybe in progress or planned in the IDRMP areas and the combined effect of multiple projects on the environment could be a concern. Although it is difficult to determine the cumulative impacts of IDRMP sub-projects and other current and future

projects at this stage, it should be accounted once the sub-projects are identified and developed.

The following mitigation measures are recommended to minimize cumulative impacts of implementing sub-projects and other development projects:

- Take into account existing and future development projects within the basin when choosing sub-project sites that will minimize cumulative impacts;
- Assess the cumulative impacts of implementing and operating sub-projects in combination with other current and future projects in the basins.
- Integrate mitigation measures recommended through cumulative environmental assessments during sub-projects implementation.

#### ***Impacts due to Dismantled Structures or Materials During Decommissioning***

At the end of sub-projects life cycle, there could arise a need to dismantle structures or materials such as removing drainage works, embankments, retention ponds, dikes, etc. Dismantling of these structures will have its own environmental consequences and thus it should be accounted during decommissioning.

The following mitigation measures are recommended to minimize impacts due to dismantled structures and materials during sub-projects decommissioning:

- Consider rehabilitating or upgrading the sub-projects to increase their service life.
- Assess the environmental impacts of decommissioning sub-projects and recommend measure to adopt.
- Properly dispose dismantled structures and materials at designates sites approved by the concerned local authorities.
- Restore or rehabilitate the sub-project sites to its natural state after dismantling structures.

**Table 7: Environmental and Social Management Plan (ESMP) – Environmental Aspects**

(**Note:** This ESMP is an indicative ESMP and it shall be further developed/updated for specific sub-projects before project implementation. Also, Contractors-ESMP (C-ESMP) shall be prepared by the sub-project contractors before project implementation.)

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
All structural sub-projects	Noise and vibration impact on wildlife	<ul style="list-style-type: none"> <li>• Avoid using heavy construction machinery during night-time</li> <li>• Carryout regular maintenance on the construction machineries</li> <li>• Select transport routes to minimize noise pollution in sensitive areas</li> <li>• Use non-mechanized construction where possible including the use of local labor</li> <li>• Install noise silencer on the construction machineries</li> <li>• Select sub-projects away from wildlife habitat during sub project screening</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget
All structural sub-projects	Impact on air quality	<ul style="list-style-type: none"> <li>• Regularly spray water (multiple times in a day where necessary) to suppress the generation of dust during construction, particularly during use of gravel roads and dirt tracks.</li> <li>• Cover with mulch and vegetation where applicable</li> <li>• Use local labor when widening river channels by excavating river banks</li> <li>• All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and with</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget



Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		proper maintenance to minimize air pollution				
All structural sub-projects	Impacts due to construction camp site and other ancillary facilities	<ul style="list-style-type: none"> <li>• Locate construction camps away from environmentally, socially, and culturally sensitive sites.</li> <li>• Locate construction camps away from local communities' settlement areas, villages, and towns.</li> <li>• Get the local authorities' concurrence in locating construction camps.</li> <li>• Provide amenities in the camp.</li> <li>• Provide potable and reliable water supply for the camp.</li> <li>• Provide reliable and sufficient energy supply to the camp.</li> <li>• Provide proper waste storage area or facility.</li> <li>• Provide sufficient ingress and egress from/to the camp with internal roads and storm drainage structures.</li> <li>• Provide reliable health care facility in the camp.</li> <li>• Provide around the clock security personnel to prevent unauthorized entrance to the camp.</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget
All structural sub-projects (particularly embankments, dykes, retention ponds)	Impact due to borrow pits and quarry sites	<ul style="list-style-type: none"> <li>• Locate borrow pits and quarry sites away from settlement areas and important habitats</li> <li>• Select low-impact materials extraction methods that will make rehabilitation of the site easier</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection	Construction phase	Part of construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Topsoil and overburden should be removed separately and segregated for later use during site rehabilitation</li> <li>• Rehabilitate the pits and quarry sites to their natural ground level to minimize impact</li> <li>• Opportunities to create ecologically valuable habitats should be considered at the borrow pits and quarry sites</li> </ul>		authorities/offices		
All structural sub-projects	Impacts due to construction wastes	<ul style="list-style-type: none"> <li>• Wastes have to properly transported and disposed to officially permitted and properly manage site</li> <li>• Provide segregated waste receptacles within construction camps or storage areas</li> <li>• Segregate and store hazardous waste in containers or specialized leak-proof plastic bags</li> <li>• Provide spill containment storage volume</li> <li>• Dispose hazardous materials only at designated disposal sites/facilities (if any) with permission from the concerned authorities</li> <li>• Never dispose used oil and filters to the ground, use leak proof containers</li> <li>• Provide Material Safety Data Sheet (MSDS) at the hazardous materials storage at all times</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Aware the construction crew and operators on proper handling of hazardous materials</li> <li>• Use appropriate PPE while handling hazardous materials</li> <li>• Develop emergency spill or exposure procedures</li> <li>• Vehicles hauling construction debris or other waste from the sub-project sites shall cover any open load with a tarpaulin or other secure covering to minimize dust emissions and dropping of debris</li> </ul>				
All structural sub-projects	Impact of construction on soil quality	<ul style="list-style-type: none"> <li>• Restore the nutrient rich top soil to its original level upon completion of construction works</li> <li>• Top soil stripped should be stockpiled for rehabilitation of the area later</li> <li>• The topsoil should be uniformly spread onto areas to be rehabilitated</li> <li>• Provide temporary drainage channels and retention ponds in cases there is a danger of increased runoff that will aggravate soil erosion</li> <li>• Access roads should be located from fertile grounds and should be rehabilitated once their use is completed</li> <li>• As much as possible, use existing access roads</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Vehicles should not drive on soil when it is wet to avoid further soil compaction</li> </ul>				
All structural sub-projects	Impact on surface water resource	<ul style="list-style-type: none"> <li>Maintain controlled flow in rivers and streams to allow downstream movement of water, sediment, and other transported materials that form the natural surface water system</li> <li>Construction wastes and other debris and oil spills shall be prevented from entering the nearby drainage system</li> <li>Protect water bodies ecosystem by properly managing construction wastes that will be generated during sub-projects implementation</li> <li>Provide secondary containment to hold on accidental spillage and prevent it from entering nearby water bodies and soil. The secondary containment should have the capacity to match or exceed the volume of fuel, solvents, and other materials to be contained.</li> <li>Use a proper fueling nozzle or funnel to avoid splashing fuel during filling of vehicles and machines.</li> <li>During filling of vehicle/machine tanks, monitor the progress of the filling so that it will not spillover. Also, let the nozzle or funnel drain before pulling out.</li> </ul>	Basin offices, Sub-project Contractor(s), Woreda water office	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction and operation phases	Part of construction and sub-projects operation budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		Develop emergency response instructions to manage accidental oil and chemical spills				
All structural sub-projects (particularly drainage works)	Impacts due to channel smoothening and clearing riverine vegetation	<ul style="list-style-type: none"> <li>• Aquatic organisms and fishery habitat along the river courses should be carefully identified and channel smoothening and riverine vegetation clearing should be avoided or minimized</li> <li>• Minimizing removal of native plant species or riverine vegetation</li> </ul>	Basin offices during sub-project identification, Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Planning and construction phases	Part of planning and construction budget
All structural sub-projects (particularly drainage works)	Impact on soil and groundwater due to disposal of dredging spoils	<ul style="list-style-type: none"> <li>• Identify the physical and chemical composition of the dredging waste before removal</li> <li>• Based on the physical and chemical composition of the dredging waste, identify appropriate removal and temporary storage methods and locations</li> <li>• When transporting dredging waste to disposal site, care shall be taken to use a leakage free method so that dredging leachate will not escape</li> <li>• The contractor should dispose the dredged spoils on a site dedicated for this purpose and officially permitted, depending on its contents</li> <li>• The contractor should liaise with the concerned local authorities to aware them of the risks/impacts of the dredging waste and assist them</li> </ul>	Sub-project Contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Construction phase	Part of construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		(if needed) in selecting and preparing appropriate disposal site				
All structural sub-projects	Impact on flora	<ul style="list-style-type: none"> <li>Survey of sub-project areas shall be done by agricultural specialists (or botanists) prior to construction to identify, protect, or relocate endangered plant species.</li> <li>Embankment construction, modification of rivers channels, and other interventions on a known areas of biodiversity significance should be avoided or minimized</li> <li>Plant indigenous trees in open spaces, along river banks, and/or other disturbed areas</li> <li>Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>	Basin offices during sub-project identification, Sub-project Contractor(s), Woreda agricultural office	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Planning and construction phases	Part of planning and construction budget
All structural sub-projects	Impact on terrestrial fauna	<ul style="list-style-type: none"> <li>Identify wildlife habitats and avoid construction of flood control measures in or near the identified habitats</li> <li>Provide alternate passage for important wildlife habitats</li> <li>Design and construct wildlife access to avoid or minimize habitat fragmentation</li> </ul>	Basin offices during sub-project identification, Sub-project Contractor(s), Woreda agricultural office	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Woreda agricultural office	Planning and construction phase	Part of planning and construction budget
All structural sub-projects	Impact on aquatic fauna	<ul style="list-style-type: none"> <li>Identify and avoid implementation of sub-projects in important aquatic habitats</li> <li>Consider providing structures that allow movement of aquatic fauna such as fish ladder</li> </ul>	Basin offices during sub-project identification, Sub-project Contractor(s), Woreda agricultural office	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Woreda	Planning and construction phase	Part of planning and construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Where practical, consider restoration of aquatic habitats upstream or downstream of the flood protection structures and replenish with the aquatic species available before sub-projects intervention</li> <li>Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>		agricultural office		
All structural sub-projects	Impact on threatened fauna	<ul style="list-style-type: none"> <li>Assess and identify threatened terrestrial and aquatic fauna in sub-projects area of influence</li> <li>Construction of embankments, micro-dams, dikes, levees, retention ponds, and modification on river course should be avoided or minimized to the extent possible to protect habitats of threatened wildlife</li> <li>Reduction and elimination of floodplains should be avoided to the extent possible to protect habitats of threatened aquatic fauna</li> <li>As much as possible, restore and replenish important wildlife habitats, including aquatic habitats</li> <li></li> </ul>	Basin offices during sub-project identification, Sub-project Contractor(s), Woreda agricultural office, Biodiversity institute	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Biodiversity institute	Planning and construction phase	Part of planning and construction budget
All structural sub-projects	Impact due to Inefficient Energy Use and Management	<ul style="list-style-type: none"> <li>Implement effective energy management system during construction work</li> <li>Operate energy intensive machines and plants at the lowest level possible</li> </ul>	Sub-project contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental	Construction phase	Part of construction budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Ensure efficient operation of machines and systems so that energy loss from leaks and other failures can be avoided</li> <li>• Periodically check and evaluate the efficiency of energy systems and where necessary replace problem components so that energy loss due to ageing of components can be avoided</li> <li>• As much as possible, reduce the overall carbon footprint of the construction work</li> </ul>		protection offices		
All structural sub-projects	Impact due to Inefficient Water Use and Management	<ul style="list-style-type: none"> <li>• Implement effective water management system during construction work</li> <li>• Implement water conservation measures</li> <li>• Ensure the proper sealing of all storage structures to avoid water loss</li> <li>• Avoid using the local communities' water sources</li> </ul>	Sub-project contractor(s)	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	Part of construction budget
All structural sub-projects (particularly drainage works)	Impact on the river regime and aquatic habitat	<ul style="list-style-type: none"> <li>• As much as possible, avoid modification of river courses or regimes identified as an aquatic habitat or breeding sites for aquatic species</li> <li>• As much as possible, avoid modification of river regimes in areas where recession agriculture and grazing are practiced by the local communities.</li> </ul>	Basin offices, Sub-project Contractor(s) Woreda agricultural office, Woreda water office	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Construction and operation phases	Part of planning, construction and sub-projects operation budget



Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Allow sufficient opening or waterway to allow movement of aquatic species</li> <li>• Allow controlled flood or release of water to replenish aquatic habitats</li> <li>• Compensate loss of aquatic species through re-introducing the lost aquatic species</li> <li>• Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>				
All structural sub-projects	Impact on groundwater resource	<ul style="list-style-type: none"> <li>• Avoid elimination of floodplains, particularly in areas (including downstream areas) where groundwater resource is limited or in use.</li> <li>• Carryout soil and water conservation programs at the upper catchment to compensate the reduction in groundwater recharge due to the reclamation of the flood plains</li> <li>• Release (if necessary, frequently) controlled downstream flow to enable groundwater recharge</li> <li>• Consider artificial recharge of selected aquifers in areas where flood control measures are implemented to replenish the groundwater</li> </ul>	Basin offices, Woreda water office	Basin offices, Regional water bureau, Woreda water office	Operation phase	Part of sub-projects operation budget
All structural sub-projects (particularly drainage)	Impacts due to reduced or eliminated floodplains	<ul style="list-style-type: none"> <li>• Avoid completely drying up or eliminating floodplains so that the natural flood cycles could be maintained</li> </ul>	Basin offices, Woreda water office	Regional / Woreda water and environmental protection	Operation phase	Part of sub-projects operation budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
works)		<ul style="list-style-type: none"> <li>Water drained out and released from floodplains should be temporarily stored in retention ponds and reused</li> <li>Compensate loss of aquatic species through re-introducing the lost aquatic species</li> <li>Restore alternative aquatic habitats for endangered species (if any)</li> </ul>		authorities/offices		
All structural sub-projects (particularly drainage works)	Impacts due to river channel modifications	<ul style="list-style-type: none"> <li>Planting grass on the river side and plug gullies by gabions to minimize soil erosion and sedimentation</li> <li>Remove sediment from river beds before it is deposited in the hydraulic strictures</li> <li>Construct watertight cutoff walls along the river side to minimize groundwater lowering as a result of deepening of the river bed</li> <li>Consider artificial recharge of selected aquifers to replenish the groundwater</li> <li>Design and construct the flood protection structures considering their most minimal effects on existing livestock and crop production and other community livelihood sources.</li> <li>To avoid affecting the livelihood of the community, locate flood regulating structures where existing irrigation water intake exists.</li> </ul>	Basin offices, Woreda water office	Regional / Woreda water and environmental protection authorities/offices	Operation phase	Part of sub-projects operation budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
All structural sub-projects (particularly drainage works)	Impacts due to paving of river channels	<ul style="list-style-type: none"> <li>• Avoid paving of river channel on the river stretch of ecological value, risk of flooding downstream, and geological features suitable for groundwater recharge, and aesthetic value</li> <li>• Consider flood speed control measures downstream of the structures</li> <li>• Consider artificial recharge of selected aquifers to replenish the groundwater</li> </ul>	Basin offices, Sub-project Contractor(s), Woreda water office, Woreda tourism office	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water environmental protection authorities/offices	Planning, construction and operation phases	Part of planning, construction, sub-projects operation budget
All structural sub-projects	Impact due to increased flood risks downstream	<ul style="list-style-type: none"> <li>• Sub-project feasibility studies and ESIA's should include hydrological modeling and risk assessment for the catchment or sub-basin and provide designs that address downstream flooding risk.</li> <li>• River modification and flood control structures should not be made on river stretches that will endanger communities, structures, parks and wildlife habitats</li> <li>• Consider flood control structures that can avoid/reduce downstream flooding without significantly compromising the river flow regimes.</li> <li>• Periodically inspect the structural integrity and soundness of the hydraulic structures</li> <li>• Implement safety measures designed by qualified engineers</li> </ul>	Basin offices, Sub-project Contractor(s), Woreda water office	PMU of MoWE, PCU of EDRMC, EMI, Basin offices, Regional / Woreda water and environmental protection authorities/office	Planning, construction and operation phases	Part of planning, construction, sub-projects operation budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Consider flood speed control or energy dissipation measures downstream of the structures</li> <li>Flood risk warning systems should be established</li> <li>People in flood prone areas downstream should be regularly informed prior to the flood event and people should be advised to evacuate to a safer location</li> <li>Hydrological station network along the river course should be established to collect information on the river flow</li> <li>Forecast possible flood risks and communicate this information to people in the flood prone areas downstream to minimize risk</li> </ul>				
All structural sub-projects	Impact of the introduction of hydraulic structures on the river water quality and quantity	<ul style="list-style-type: none"> <li>Implement catchment protection and watershed management to reduce sediment load trapped by the hydraulic structures</li> <li>Deterioration in river water quality due river eutrophication can be minimized by controlling fertilizer input on farmlands upstream</li> <li>Planned hydraulic structures should allow controlled but constant flow downstream.</li> <li>Monitor quality of water upstream and downstream of the hydraulic structures</li> <li>If necessary, increase the frequency of release of water from the structures</li> </ul>	Basin offices, Sub-project Contractor(s), Woreda water office	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water and environmental protection authorities/offices	Planning, construction and operation phases	Part of planning, construction, sub-projects operation budget

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility for Implementation	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
All structural sub-projects	Cumulative impacts	<ul style="list-style-type: none"> <li>Take into account existing and future development projects within the basin when choosing sub-project sites that will minimize cumulative impacts</li> <li>Assess the cumulative impacts of implementing and operating sub-projects in combination with other current and future projects in the basins</li> <li>Integrate mitigation measures recommended through cumulative environmental assessments during sub-projects implementation</li> </ul>	Basin offices, Sub-project Contractor(s), Woreda water office	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water and environmental protection offices	Planning, construction, and operation phases	Part of planning, construction, and operation budget
All structural sub-projects	Impact due to dismantled structures or materials after decommissioning	<ul style="list-style-type: none"> <li>Consider rehabilitating or upgrading the sub-projects to increase their service life</li> <li>Assess the environmental impacts of decommissioning sub-projects and recommend measure to adopt</li> <li>Properly dispose dismantled structures and materials at designates sites approved by the concerned local authorities</li> <li>Restore or rehabilitate the sub-project sites to its natural state after dismantling structures</li> <li></li> </ul>	Basin offices	Woreda environmental protection authorities/office	Decommissioning phase	Part of decommissioning budget

## 7.4 Potential Social Impacts and Proposed Mitigation Measures

### 7.4.1 General

Implementation and operation of the sub-projects is expected to have the following social impacts: land acquisition (temporary or permanent) for the various flood control structures to be constructed, land acquisition particularly has a higher impact on the pastoral and agro-pastoral households and women as vulnerable community groups will disproportionately be affected, risk due to influx of workers, risk due to damage of existing infrastructure, impact due to restricted community movement, damage to cultural heritage, historic and ritual sites, impacts on public health, infectious and communicable diseases impacts, GBV-SEA/SH, child labor, risk of exclusion/discrimination, social tension and conflict, and the risk of operational concerns due to remoteness and insecurity.

Considering these and other relevant impacts the social risk rating of the project is *High* while the GBV-SEA/SH risk rating is *Moderate*. The overall environmental and social risk rating of the project is **High** based on the revised appraisal ESRS.

The following sections provide details of the anticipated main social impacts during sub-projects implementation and operation. Further, mitigation measures are recommended for the identified impacts. The mitigation measures recommended in this ESMF shall be further updated before sub-projects implementation in the sub-project specific environmental and social instrument to be prepared following the screening process. The mitigation measures shall be consistent with the mitigation hierarchy, i.e., (a) anticipate and avoid risks and impacts; (b) where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) once risks and impacts have been minimized or reduced, mitigate; and (d) where significant residual impacts remain, compensate for, or offset them, where technically and financially feasible.

### 7.4.2 Potential Adverse Social Impacts

#### 7.4.2.1 Component 1: Strengthening Institutional and Coordination Capacity for DRM & Component 4: Project Management and Implementation Support

##### *Institutional Capacity*

- Limited institutional and staff capacity in government sector stakeholder organizations collaborating in IDRMP implementation could affect project implementation as well as ESMF monitoring.
- The absence of a separate environmental and social safeguard (ESS) unit adequately staffed with the respective relevant specialists at federal and basin level in MoWE and EDRMC.
- The absence of specialists at federal Implementing Agencies ((IAs) level assigned to monitor the process of environmental and social safeguard management.

- The tendencies on part of SC to view their responsibilities as secondary to regular government jobs.
- Existing gaps in knowledge, skills and attitudes at *woreda*/grassroots levels in relation to safeguard issues.
- Inadequate transport logistics, office space, and equipment.

#### *Mitigation measure*

- Deliver capacity building trainings adapted to the needs of target stakeholders by project component.
  - Put in place a separate ESS unit at federal level in MoWE and EDRMC.
  - Deploy the relevant professional staff in the management of environmental and social safeguard issues.
  - Facilitate the conduct of capacity enhancement trainings for the safeguard professionals in selected areas of safeguard management.
  - Deploy the relevant professional staff to monitor the process of environmental and social safeguard management
  - Facilitate the conduct of capacity enhancement trainings for the safeguard specialists on relevant subjects.
  - Raise the awareness of SC in respect to their responsibilities and the overall significance of their contributions to the success of the project.
  - Assess and understand the root causes of the observed problems and introduce appropriate measures to address them.
  - Carry out tailored and customized capacity building trainings for basin office/*woreda*/grassroots ESMF implementing structures/committees.
  - Strengthen the institutional capacity of PMU and PCU, particularly basin and sub-basin offices through the provision of transport logistics and office equipment.

#### *Monitoring*

- Inadequate attention given to the importance of the monitoring and evaluation of safeguard management processes.

#### *Mitigation measure*

- Introduce participatory monitoring and evaluation (PME) system and marrying it with more traditional results-oriented approaches to program management.
- Social and environmental safeguards issues should constitute the core of M & E exercise and ESMF need to provide detail steps and templates for screening process.

#### *GRM*

- IDRMP's grievance redress mechanism stipulated in the ESMF may not uniformly be used during the implementation.

*Mitigation measure*

- Ensure that IDRMP develop and uses its own in-built grievance redress mechanism, in which PAPs have reasonably representation.
- Strengthen the capacity of individuals who will be involved in grievance handling processes particularly at grassroots levels through appropriate trainings.
- Strengthen the traditional dispute settlement institutions through trainings in the areas of the basic elements of the law and gender sensitive issues, particularly women and girls rights.

*Staff Turnover*

- The risk of frequent staff turnovers as a result of poor motivation, low remuneration, and inadequate incentive schemes.

*Mitigation measure*

- Introduce competitive salary scale and other benefit packages to recruit and retain competent technical staff.
- Fulfillment of better infrastructure bases, and support for the Project by the higher level IDRMP structures.

#### **7.4.2.2 Potential impacts of Component 2: Accelerating Flood Risk Management**

***Aggravates Downstream Flood Problems***

The flood control and protection projects aggravate flooding problems in downstream areas of the basins. As stated earlier, flood control structures like dykes protect the river from flowing outside of its course on its way downstream. In the Middle and Lower Awash, for instance, these situations can increase the river water volume in the downstream areas, especially in parts of lower Awash, where the river course is narrow with shallow depths, with the resultant serious overtopping problem. Therefore, the project should address such possible impacts which may be expected as the river course cannot accommodate the increase in water volume.

*Mitigation measures*

To mitigate such downstream possible flood problems:

- Reduce downstream flooding risk through periodic monitoring, surveillance, and inspections of flood control structures to anticipate risks.
- Reduce consequences through preparing nonstructural measures such as early warning systems, emergency preparedness plans, emergency response capacity building



- Enhanced hydromet monitoring/gauging to anticipate risks
- Establish effective communication channels among local administrations to communicate downstream flood risks to enable flood early warning

### ***Restricts Traditional Water Uses Outside Flood Protection/Dyke Structures***

Dykes and flood embankments protect the river water within or between the structures. Areas outside the dykes or related structures may have been under different uses. For example, it could be that the waters were used for traditional irrigation, livestock grazing or for watering perennial and horticultural crops. When such structures are designed, unless the communities are made to have access in some ways to the waters of the river for the stated purposes, they may resort to intentionally breaking off the dykes for the use of the water, which, in turn, may create flooding problem.

#### ***Mitigation measures***

To avoid such impacts and make the project go in harmony with community interests and benefits:

- Consult project affected communities where to construct the structure that will allow them to have access to the waters for irrigation, grazing and other domestic uses, and;
- Design and construct water intake points with regulating structures that will enable the river water reach them to be used for their customary practices.

### ***Loss of Pasture, Crops, Livestock and Other Resources***

The lands within dyke alignments on both sides of the river courses may be lost or wasted due to flood control and management projects. The dyke alignments may enclose settlements, irrigable lands, perennial crops and trees along the river courses nearer to the river especially in downstream areas. As the intended projects may hinder the river water flows traditionally used for purpose of irrigation and pasturage in the flood plains, the horticultural farms and grazing lands would not get water as before, which may negatively impact the agro-pastoral pursuit of the inhabitants. Livestock herding communities in the flood plains of the lowlands of the basins may in particular suffer the negative consequences of flood control interventions, owing to the fact that their grazing fields do not get water by natural overtopping of the river. The situations would undoubtedly undermine their livestock productions and generally their cattle-based livelihood.

#### ***Mitigation measures***

In order to minimize the possible impacts:

- Design and construct the dyke structures considering their most minimal effects on existing livestock and crop production and other community livelihood sources by changing dyke routes.
- Design and construct water regulating structures where irrigation water intake and overtopping areas exists based on the significance of the sites.

- Grievance Redress Mechanism should be put in place to address the community complaints.

### ***Loss of Farm and Grazing Lands (Land Acquisition)***

Implementation of the envisaged integrated flood control and management projects will entail temporary or permanent land loss and acquisition owing to the location of the various components of the project. The components that will require permanent land taking include ponds and dykes that appropriate farm and grazing lands of the project target communities. Nearly all the integrated flood management project components will be located on land areas that belong to smallholder farmers and/or pastoral households, and these plots (used as farm and grazing lands) will be taken away for the sub-project activities. Hence, the installation of these components would involve acquisition of land under individual and communal ownership. Other project components such as quarry and spoil disposal sites, which are located in the project target communities, may essentially require permanent land acquisition. Most of these structures are positioned on lands currently under individual or community use.

### ***Mitigation measures***

- Restoration of productive lands affected by temporary activities;
- Scheduling the construction during dry season when the land is not under cultivation;
- Provide adequate compensation for the property losses and damages;
- Pastoralists shall be granted to own land plots in accordance to the constitutional rights offered to all Ethiopians outside the dyke alignments.
- For pastoralists and agro-pastoralists who reside between the intended dyke alignments and who have lost grazing and farm lands, crops and other livelihood sources as a result of the flood control interventions, the project has to make sure that mechanisms are in place to redress project-induced asset losses, restriction of access and/or use to natural resources in line with Ethiopian law and the relevant standards of the World Bank.
- In addition, the affected have to be compensated with a plot of land proportional to size lost as replacement from community land, if available, or be paid a duly assessed compensation.
- Grievance Redress Mechanism should be put in place to address the community complaints.

### ***Economic Displacement Induced by Subproject Implementation***

There is the risk of some displacement of farm and agro-pastoral households from their villages induced by the implementation of the flood reduction/protection infrastructures in selected subproject areas, forcing inhabitants to take up new settlement. These new settlements could be areas that are marginal, less fertile and less productive sections of the region, and as a result of such dislocations the affected households may continue to be impoverished.

### ***Mitigation measures***

- To make up for the losses and displacements sustained by the subprojects, compensatory measures need to be adopted, and these include the settling of displaced farm and pastoral households and the provision of irrigated pasture for pastoral villagers.
- Creation of employment opportunities: As part of the compensation and catering to the needs of the displaced people, the construction phase of the subprojects should engage the local labor force. People may be employed for skilled and non-skilled tasks, and these employment opportunities will broaden and strengthen the income of local communities and thus will improve their ability to absorb shock.
- Grievance Redress Mechanism should be put in place to address the community complaints.
- The resettlements of the displaced should not be allowed between the dykes or other flood control structure alignments on both sides of the river courses.

***Livelihood Restoration:*** The World Bank's ESS 5 requires that displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation. Livelihood improvement, therefore, is not accomplished by compensation for lost assets. The standard clearly states that the displaced should become net beneficiaries of the project that is displacing them. Displaced and compensated persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them. The livelihood restoration activities as mitigation measures should include:

- For persons whose livelihoods are land-based, replacement land that has a combination of productive potential, locational advantages, and other factors at least equivalent to that being lost should be offered where feasible;
- For persons whose livelihoods are natural resource-based, measures should be implemented to either allow continued access to affected resources or to provide access to alternative resources with equivalent livelihood-earning potential and accessibility.
- The Project should offer economically displaced persons options for alternative income earning opportunities, such as credit facilities, skills training, business start-up assistance, employment opportunities, or cash assistance additional to compensation for assets.

To assist the displaced and improve/restore their livelihood:

- Capacity building training on businesses which they want to engage;

- Technical support in Business Plan Preparation, and implementation of the businesses; and
- Follow-up, supervision and monitoring of the implementation of the business.

### ***Damages the Existing Infrastructure and Institutions***

The flood control and protection projects may affect roads, private and government infrastructures, and canal networks in the project target *woredas*/communities located both in upstream and downstream areas. The dyke construction may affect some of the public institutions along the river course as it increases the river volume which can damage the infrastructures particularly in downstream areas during high flooding. Moreover, unless the silt is removed from the river courses, roads and bridge can also be exposed to damage.

### ***Mitigation measures***

In order to avoid and/or minimize the possible impacts:

- Design and construct dyke alignments by minimizing or avoiding possible damages on existing infrastructures and institutions.
- Locate structures and underground installations in consultation and cooperation with relevant large-scale development projects and economic establishments in the areas.
- Change dyke route or design them in such a way that they avoid possible damages on different institutions and infrastructures.
- Cooperate with public services providers in the area to avoid service delivery disruptions, and timely notify service provision temporary interruptions.

### ***Restriction of Access to Movements***

Flood control physical infrastructures like dykes may close or restrict human and livestock movement corridors. In such cases, the structures may be damage or destroyed by movement of people and animals. On the other hand, access road problems can occur by the damage of bridges, and this will completely disrupt the traditional bridges at some areas particularly during rainy season. Therefore, such situations should be harmonized with the social needs of the communities by adjusting working schedules so as to attain project goals, address community needs and ensure social and environmental sustainability.

### ***Mitigation measures***

- Consult the communities where such assess restrictions exist and on how to harmonize structures with their demands and needs.
- Design and construct dyke crossing structures such as bridges or dyke construction selected materials that enables maintaining the dyke quality, sustainability and attainment of community demands.

### ***Noise Disturbance and Increased Vehicle Traffic***

Noise by heavy machinery will cause disturbance on the local communities. The noise and

vibration from both the construction and operational phases of the subprojects should therefore be taken into considerations. With regard to vehicle traffic, localized traffic delays at specific junctions and roads during excavations, and closure of some access to properties as the excavation activities are taking place will have an adverse impact. There is also the risk of increase in traffic volumes and incidences of accidents as a result of heavy trucks transporting construction materials. The operation of heavy trucks and machineries could create in significant vibrations which in turn results in damage of structures nearby.

#### *Mitigation measures*

- The subprojects shall ensure that equipment which generate a lot of noise shall be operated only during day time.
- Movement of all project vehicles and personnel will be restricted to within work areas, to avoid noise pollution.
- Operation of heavy machineries shall be avoided near structures and where necessary temporary support of the structures to protect them against the effects of vibration shall be considered.
- The construction workers will be provided with safety device for protection of ears (earmuffs and ear- plugs etc.)
- Vehicle traffic through the communities shall be avoided as far as possible and project routes will be authorized by the Safeguard specialists.
- Vehicle speeds will be kept low, and horns will not be used while passing through or near the communities. Equipment will have exhaust silencers to minimize noise generation.
- Nighttime traffic will be avoided near the communities.
- Working hours for construction activities within/near the communities will be limited to between 8 am and 6 pm.
- Liaison with the community will be maintained.
- Grievance Redress Mechanism will be put in place to address the community complaints.

#### *Other mitigation measures shall include*

- Signage instructing speed regulation shall be hoisted in the subproject sites.
- Speed humps shall be installed at appropriate locations.
- Flagmen shall be positioned to regulate traffic flow.
- Management of traffic shall be handled in collaboration with local Traffic Police.

#### ***Occupational Health and Safety Hazards/Risks***

Workers participating in construction of basin level physical investment project activities may be exposed to various occupational accidents and health risks due to low level of awareness on safety precautions and lack of personal protective equipment (PPE). The occupational accidents and health risks encountered involve major and minor injuries. There is thus a need to provide general safety training/orientation to physical flood protection infrastructure workers at the start

of the subproject implementation and equip them with the necessary PPEs to avoid OHS risks. Sub-project contractors should prepare OHS plan for the site or comprehensively include OHS requirements in the C-ESMP. Further, contractors should have health and safety officers in their teams. The following are brief descriptions of the OHS risks that could be commonly encountered during subproject implementation:

### ***Overexertion***

Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, and manual handling, could be among the most common causes of injuries in construction sites.

Recommendations for their prevention and control include:

- Training of workers in lifting and material handling techniques in physical investment subprojects, including the placement of weight limits above which mechanical assists or two-person lifts are necessary.
- Planning work site layout to minimize the need for manual transfer of heavy loads
- Selecting tools and designing work stations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable work stations
- Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks.

### ***Drowning***

As the IDRMP involves implementation of sub-projects that involve water related interventions, the construction crew and sub-project participants are at a risk of drowning during the various construction tasks. Drowning is a major occupational hazard that often result in fatalities and should be addressed properly. All water bodies (rivers, storage facilities, etc) should have edge protection or barriers to prevent risk of falling-in and drowning. Also, all work near the edge or in water bodies should be done in such a way that risk of drowning is avoided. Emergency procedures in the event of drowning should be considered.

### ***Slips and Falls***

Slips and falls associated with liquid spills, and uncontrolled use of cords and ropes on the ground, may be among the most frequent cause of lost time accidents at construction work sites.

Recommended methods for the prevention of slips and falls include:

- Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths.
- Cleaning up excessive waste debris and liquid spills regularly.
- Locating cords and ropes in common areas and marked

corridors.

- Use of slip retardant footwear.

### ***Work at Heights***

Falls from elevation associated with working with ladders, scaffolding, and partially built or demolished structures are among the most common cause of fatal or permanent disabling injury at construction and related works sites. If fall hazards exist, a fall protection plan should be in place which includes one or more of the following aspects, depending on the nature of the fall hazard:

- Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface.
- Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces.

### ***Struck by Objects***

Construction activities may pose significant hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities. Techniques for the prevention and control of these hazards include:

- Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels.
- Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable.
- Wearing appropriate PPE, such as safety glasses, hard hats, and safety shoes.

### ***Confined Spaces and Excavations***

Examples of confined spaces that may be present in construction sites include: utility vaults, tanks, sewers, pipes, and access shafts. Ditches and trenches may also be considered a confined space when access or egress is limited. In confined spaces, dangerous atmospheres can arise when there is a lack of oxygen or when toxic or flammable gases are present. The occupational hazards associated with confined spaces and excavations in construction sites should be prevented according to the following recommendations:

- Providing safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders.
- Avoiding the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is

actively ventilated.

- Work procedures for confined place entry shall be developed including gas detection before entering, adequate ventilation, never working alone, providing harness and rope to extract workers in case of emergency, etc.
- Under no circumstances entry to confined space be done without the supervision.
- Workers should be trained on how to use safety and rescue equipment related to confined space entry.
- Controlling site-specific factors which may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning.

The building of flood protection subprojects requires several workers to engage in construction and related activities. Construction is a high-risk and accident-prone occupation, and this particularly so when it is carried out in absence of basic safety measures, and there is lack of personal protective equipment (PPE) such as gauntlets, eye glass, working cloths, and shoes. When the labor force is subject to work under such low or below standard working conditions, accidents, injuries and other occupational health hazards will inevitably occur. These safety hazards can, however, be minimized or avoided by instituting the necessary protective measures and precautions. In relation to flood control and management interventions, accidents may occur at the construction sites, project-related borrow pits and quarries.

Moreover, some of construction workers may come from places outside of the project sites and start to live and work in the areas away from home for an extended period of time. This will potentially expose them to HIV/AIDS and other sexually transmitted diseases (STDs). COVID-19 exposure and infection is another risk. Potential sources of exposure in COVID-19 case include having close contact with a coworker or member of the local public who is ill with COVID-19 and touching ones nose, mouth, or eyes after touching surfaces contaminated with the virus or handling items that others infected with COVID-19 have touched.

#### *Mitigation measures*

- Ensure the presence and continued use of normal control measures, including personal protective equipment (PPE), necessary to protect workers from other job hazards associated with construction activities.
- First aid equipment should be provided at the workplace. Training on first aid should be given to workers and a dedicated first aider should be available at all sites.
- Arrangement for emergency medical treatment, life jackets, and lifesaving equipment should be provided for work to be done near water bodies.



- Compulsory HIV/AIDS and STDs, and COVID-19 awareness creation and prevention training (information, education, communication (IEC) for all workers, including truck drivers delivering supplies to the sites, and free access to condoms;
- Provide and have all workers wear face coverings (i.e., cloth face coverings or masks) and face coverings should be provided at no cost to workers.
- Train workers on COVID-19 policies and procedures in a language they understand.
- Ensure tender documents include standard best practice clauses for topics ranging from accommodation to waste management and quarry and borrow-pit operation and closure.
- Employ the local people for labor works.

**OHS Training:** As a preventive approach to avoid and minimize the above listed and other OHS hazard and risks from occurring at construction and related works sites, the provision of OHS training is recommended to be offered to all workforce participants before the commencement of physical works. Provisions should be made to provide OHS orientation training to all new workers to ensure that they are apprised of the basic site rules of work at/on the site and of personal protection and preventing injury to fellow employees. Training should consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Every Occupational Health and Safety risks need to be reported and responded on time based on the Accident/Incident Recoding, Reporting and Responding Guideline.

### ***Damage to Cultural Heritage and Historic and Ritual Sites During Excavation and Construction Operations***

Cultural, historic and archaeological heritage sites may be damaged or lost during excavations and the ensuing construction works and activities. Part of the displacement and loss of land as a result of excavation and construction of subproject operations could be the destruction of sacred funeral and ritual sites as well as loss of land to which SSAHUTLC have collective attachment.

Cultural heritage resources are normally not fully known during project preparation, but infrastructure subprojects, as indicated above, may be located in the influence area of some sites.

### ***Mitigation measures***

- Public consultations, engagement of cultural or religious leaders, local authorities need to be conducted before decision on subprojects is made.
- Identify and avoid areas of cultural, historic and or religious significance.
- Involve community in locating appropriate project sites and access routes that avoid such resources.
- Include or add a clause for chance find procedures in construction contract agreements.
- Contractors are required to prepare and implement C-ESMPs.

- If disturbance is unavoidable, agreement on mitigating measures must first be reached with stakeholders, particularly project affected communities.
- If excavation encounters archaeological artifacts, halt construction and notify relevant authorities, and mitigate properly.
- Design and construct the dyke or other flood reduction structure routes in harmony with the cultural, religious and historical heritage sites along the river course.
- Notify an institution responsible for culture, religious and historic heritage sites protection and conservation, etc.
- Grievance Redress Mechanism should be put in place to address community complaints.

### ***Impacts on Public Health (Waterborne, Communicable and Vector-Borne Diseases)***

The excavation of borrow sites and quarry sites may form stagnant water ponds and these ponds can be the source of health risks to the local people by serving as a favorable breeding site for mosquito and other communicable waterborne disease-causing parasites. IDRMP subproject physical investment activities to be implemented in the lowlands and arid climatic zones (such as micro-dams and retention ponds) are in particular susceptible to malaria.

#### ***Mitigation measures***

- Ensure that that these subprojects are accompanied by education for improved sanitation and hygiene.
- Design and maintain drainage lines subprojects properly to have the capacity of removing runoff waters from the residential areas before it stagnates.
- Pesticides which are not restricted or banned can be used consistent with ESS3 requirements.

### ***Infectious and Communicable Diseases Impacts***

Over the project's lifetime, significant number of people may move to subproject sites. As the subproject construction activities commence, they attract workers from different parts of the basins, and the migrants could be skilled and semi-skilled workers, including daily laborers. The migrant workers may come either with new types of infectious or communicable diseases that would infect others, and this would result in the spread of epidemics. There may be risks of sexually transmitted diseases (STD), including HIV and AIDS, and COVID-19 due to increased movement and interaction between migrant workforce and the local inhabitants, with serious potential adverse social and health impacts.

#### ***Mitigation measures***

- The provision of HIV and AIDS education and information shall form part of the delivery and health care services by all health care providers for all the migrant construction worker, including the local workforce.

- The project shall work closely with respective government departments, local NGOs, and/or faith-based organizations, and local communities involved in HIV and reproductive health.
- Voluntary Counseling and testing services to the workers and community members shall be made available constantly.
- All subproject sites/workplaces shall make COVID-19 information from relevant health agencies readily available to their workforce.
- There should be continuous sensitization of the workers and community members about HIV/AIDS and other STDs.
- The following action points should be provided to all workers in all workplaces to prevent transmission of COVID-19.
  - ✓ Physical distancing: Introduce measures to keep a safe physical distance in accordance with national regulations.
  - ✓ Hand hygiene: Implement conveniently located hand washing stations or alcohol-based hand sanitizer at all facilities.
  - ✓ Cleaning and disinfection of environmental surfaces.
  - ✓ Personal protective equipment (PPE): Workplaces have a responsibility to provide at no cost suitable and sufficient PPE, conduct training and monitor safe use among its workers

### ***Improper Campsite Impacts***

Construction workers campsites are among the social and environmental Camp site locations can have significant impacts such as health and safety and security risks on local nearby communities. For instance, there will be the risk that the campsites may be located near sensitive institutions such as schools attended by children below 18 years of age (minors/adolescents) who are more susceptible to sexual harassment, abuse and exploitation by construction workers and others working in subproject related activities.

### ***Mitigation measures***

In order to harmonize the construction workers camp site related impacts the Contractor shall:

- Locate construction camps at socially and environmentally safe sites.
- Consult and liaise with the appropriated local leaders and community representatives and residents regarding the location of excavation sites.
- Locate workers camp away from communities' settlements in order to avoid social conflicts, natural resources damages and minimize disease transmissions.
- Inform local authorities responsible for health, religious and security so as to maintain effective surveillance over public health, social and security matters.
- Massive awareness campaigns on sexual harassment, abuse and exploitation and early child marriages practices to construction workers, parents, teachers, pupils and students and local leaders.

### ***The Risk of GBV-Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH)***

In the context of IDRMP, the subprojects, particularly those involving construction of basin-level flood risk control and reduction infrastructural works under Component 2, can potentially pose a moderate SEA/SH risk affecting both target community members, the workforce and service users. Social impacts resulting from GBV-SEA/SH are critical to address, even though, based on the below assessment of the risk factors and the nature and scope of investment subprojects, the risk is still considered to be moderate. The main GBV- SEA/SEAH risks and action plans are contained in this ESMF report as annex.

The GBV-SEA/SH risks can intensify within local communities when there is labor influx of male workers from outside the area. Such workers, more often than not, come without their families and have reasonable disposable incomes relative to the local community, and this can pose a risk in terms of sexual harassment, violence and exploitative transactional relationships. These risks are higher where workers come into close contact with the local community or when living together in remote areas. In addition, adolescent girls and boys in the local communities where subproject physical investments are carried out and those children attending nearby schools are more susceptible to sexual harassment, abuse and exploitation by construction workers and others working in subproject related activities.

Workers on infrastructure projects are predominantly young and male. Those who are incoming are single or are separated from their family or spouse, and are outside their habitual sphere of social control. Further, in rural settings, where the presence of law enforcement is often low, the risk of sexual harassment for local women is likely higher, in particular for younger women and girls. In the context of labor influx, fraternization or the practice of conducting close social relations by incoming workers with female members of the local community, can lead to a range of unacceptable and/or illicit behavior. This includes unwanted aggressive advances, sexual harassment, gender-based violence against women and children.

During the construction phase, workers may also be vulnerable to various forms of harassment, exploitation and abuse, aggravated by traditionally-male working environments. In such circumstances, female construction workers may be subjected to sexual harassment and exploitation as common features of workplace life. This GBV- SEA/SH may mostly be committed by coworkers or construction supervisors, and this is largely due to gendered stereotypes about the sexual availability of female construction workers.

An important precipitating factor for the risk of SEA/SH is land acquisition that occurs during the construction phase. Individuals who make decisions about resettlement and compensation can abuse this power to sexually exploit vulnerable community members, such as those in female-

headed households. This risk is exacerbated in project affected local communities where women cannot legally hold land titles and are therefore more easily removed from their land.

Understandably, the risk factors that increase the potential for GBV-SEA/SH in flood risk control/reduction construction include:

- Large-scale influx of transient male workers into small and often rural host communities with low capacity to absorb the sudden increase of workers;
- Remote locations where people have limited access to resources to report GBV-SEA/SH and receive support;
- Presence of security personnel (local police, *kebele* militias, etc.) who can provide protection but can also abuse their positions of power and status to perpetrate GBV.
- Male workers transporting goods (e.g. truck drivers), who can perpetrate GBV on routes and at truck stops associated with the subproject, even if not on the project site.
- Poorly designed or maintained physical spaces on subproject sites and in worker accommodation, for example bad lighting in and around grounds and access routes.

### *Mitigation measures*

It is of paramount importance that the IDRMP Project Management Unit (PMU) see to it that robust measures to address the risk of GBV are adopted (See Annex 16 for SEA/SH Prevention and Response and Action Plan). These include

- Assign a gender expert at the PMU/PCU and paid focal person at the basin and sub-basin office levels.
- Apply GM strategy in all the project cycle through application of gender analysis, gender responsive allocation of resources to address gender specific interventions and M&E.
- Mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women;
- Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted;
- Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for non-compliance (e.g., termination), and
- Contractors adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.
- Ensure codes of conduct are publicly disclosed in local languages and are widely accessible to all workers and all groups of people in project areas.
- Deliver periodic mandatory training on GBV to all workers, including contractors, subcontractors and primary suppliers, as well as relevant consultants and clients.

- Develop safe, confidential and accessible grievance reporting, referral and support systems for workers and local communities.
- Involving relevant authorities such as law enforcement, community leaders in handling sexual abuse in project communities and ensure that where relevant, referral pathways for eventual cases are identified.
- Training grievance redress committee to handle issues of sexual abuses perpetrated by project workers, and members of the community.
- Provide safe, secure and separate living spaces for male and female construction workers.
- Provide lighting around project sites, including around latrines and access routes.
- Install separate, lockable latrines for female construction workers.
- Develop M&E system with clear indicators to follow up progress made and challenges encountered

### ***Child Labor***

Child labor is a serious problem in Ethiopia. Studies have found that children in Ethiopia engage in the worst forms of child labor, including in the construction sector where they have been employed to do jobs such as carrying heavy loads and digging. During project construction period, contractors may use child labor due to lack of or awareness and lesser attention to its implication. Therefore, the following mitigation measures should be applied to counter the risk of forced and child labor:

#### ***Mitigation measures***

- Trainings to ensure contractors are informed of legal consequences of child labor to discourage practice
- Ensure that contractors document and verify age of all prospective workers prevent employment or engagement of child labor. Hence, obtaining written confirmation from the applicant of their age; and where there is any reasonable doubt as to the age of the applicant, requesting and reviewing available documents to verify age (such as a birth certificate, national identification card, medical or school record, or other document or community verification demonstrating age, when available) should be undertaken prior to the employment or engagement of a project worker and kept on file.
- Prepare a separate LMP which included terms and condition of employment and minimum age.
- Periodic monitoring to ensure that terms and conditions of all project's workers are in accordance with the requirements of national law and ESS2 as indicated in the LMP.
- Establish a GRM through which workers will be able to lodge their complaints, concerns, difficulties

### ***The Risk of Exclusion/Discrimination of Underserved and Other Vulnerable Groups***

Some groups confront barriers that prevent them from fully participating in or benefiting from development interventions, in this case flood risk control/reduction investment projects, and these groups may be excluded not only through legal systems, land, and labor markets, but also

discriminatory or stigmatizing attitudes, beliefs, or perceptions. Disadvantage is often based on social identity, which may be across dimensions of gender, age, location, occupation, ethnicity, religion, among other factors. For instance, acknowledging that women have fewer resources to prevent, cope with, and adapt to flood disaster, addressing the issues of gender-based social exclusion, discrimination and differential treatment constitutes an important focus, as stated in the PAD,. However, in the implementation of disaster risk management activities of the Project, there is the potential adverse social risks/impact of exclusion. Elderly and disabled individuals with mobility challenges, poor women with dependent children, persons living with HIV/AIDS and chronic illnesses and other underserved groups are often the most vulnerable members of society because of their limited access to information due to social, cultural and structural barriers within the communities. Therefore, there is a continued need to reach out these vulnerable groups by transcending the social, cultural and structural barriers to avoid the risk of exclusion.

### *Characteristics of Vulnerability and Underserved Target Communities*

According to the National Social Protection Policy of the Government of Ethiopia (GoE), in the Ethiopian context, vulnerability is associated with low agricultural/pastoral growth, natural calamities, economic shocks, health and nutrition risks, and population explosion. It is also connected with environmental degradation and dependence on rain-fed agriculture and pastoral livelihood, which are the contributory factors of chronic food insecurity, as well as with unemployment and underemployment. Broadly definition, the term vulnerability applies to all social groups that find themselves disadvantaged because of the deprivation of access to socioeconomic benefits, or the adverse consequences suffered as a result of mainstream development interventions. IDRMP is expected to bring about economic growth in the agriculture and pastoral sub-sectors in the selected *woredas* of the target basins, which is broad-based and holistic, creating equitable access and choices to vulnerable social groups. The Project will reduce impact of floods in the target areas by reducing casualties, physical damages, economic losses, negative human and welfare impacts, and displacement of vulnerable households, thereby reducing those falling into poverty due to recurrent floods.

Vulnerability describes the factors which expose people to the negative impacts of their living circumstances, and render them less resilient to cope with these impacts. Economic poverty is obviously a vulnerability factor; other factors include sudden shocks such as economic collapse or natural disasters (price hikes, sudden conflict or prolonged drought). Further vulnerability factors are: lack of adequate understanding and awareness resulting from insufficient or inappropriate communication of information and ideas; embedded social and cultural attitudes and practices which discriminate against or give precedence to certain people on certain grounds (gender, age, ethnicity, religion, and occupation); attitudes towards people manifesting certain behaviors, or reactions to people with certain conditions (people living with HIV, people with disabilities). Vulnerability can also be seen in terms of biophysical environment such as people

who live in semi-arid lowland areas.

From the perspective of IDRMP, focus should be on the most vulnerable population groups such as historically underserved livelihood groups (nomadic and semi-nomadic pastoralists), women, unemployed and underemployed youths, occupation groups, and culturally distinct ethnic communities. Based on the review of relevant secondary sources and the field data collected, the key factors affecting people's abilities to access project benefits/services include poverty, gender-based inequalities, forms of livelihood, customary practices, and spatial disparities in resource potential.

### *Disproportionate Impacts and Implications of IDRMP vis-à-vis Vulnerable Groups and Underserved Peoples*

The constitution of FDRE recognizes the diversity of the population in ethno-linguistic, cultural, religious and socio-economic terms. The Constitution also recognizes the historical imbalance among the diverse population groups in respect to inclusion and access to benefits from the whole range of state sponsored development programs. On the consideration of these historical facts, expressions of political commitments have been made by the government of FDRE in legal, policy and programmatic documents to redress the inequities in socioeconomic development benefits experienced by vulnerable population groups and underserved ethnic communities.

Fundamentally, development programs like IDRMP are designed to produce positive and lasting impact on target beneficiaries. Nonetheless, development programs may also at times result in unintended adverse consequences or differential impacts on different categories of people. Furthermore, vulnerable population groups such as women, pastoral groups, youths, ethnic minorities, and culturally distinct communities may end up being excluded from development interventions. The awareness of such scenarios in the overall management of development programs is essential to prevent their occurrence or mitigate their adverse effects. In light of this, it is important to consider the potential impacts and implications of IDRMP vis-à-vis vulnerable groups and historically underserved peoples in the project basins and sub-basins.

*Pastoral Land acquisition* – IDRMP requires land for the management of various subproject interventions (e.g. Basin-level flood risk management investments such as river/channel widening; flood embankments; dykes; water transfer structures; earth dams and gabions; retaining wall; and water ponds. In the process of acquiring land for the stated purposes, it is highly likely that pastoral households and community groups will be affected by the loss or restriction on the use and access of individually or communally held assets. Traditionally, pastoral land has always been viewed as 'unused', 'unoccupied', 'unsettled' and 'no man's land', and hence was taken away from the pastoralists and used for state-sponsored development projects. These dispossessions of pastoral lands have been carried out without due compensation to the herding communities and without



taking into considerations the needs and interests of the local pastoral populations, resulting in loss of prime dry season grazing, deprivation of access to water resources, and displacement of the pastoralists. These have been the fate of the Karrayu, Afar, Issa Somali pastoral groups inhabiting the middle and lower Awash valleys.

#### *Mitigation measures*

- Make use of and follow up the strict observation of the government policy on gender and other forms of social inclusion, as stated in policy and legal frameworks of this ESMF report;
- Conduct periodic and specific field identification of key issues of exclusion, discrimination and marginalization of women and other vulnerable groups through social inclusion analysis and impact assessment;
- Assess the constraints and opportunities in the Project for encouraging involvement of these groups;
- Assess the organizational capacities of the implementing organizations, and develop Action Plan to ensure that these groups benefit equally from subproject interventions;
- Utilize community structures and local administration to mobilize minority groups to participate in meetings and consultations,
- Provide local language interpreters to ensure understanding and ability to give feedback during engagement.
- Target women and youth in project consultations and activities for their meaningful inclusion in project decisions.
- Ensuring involvement of women in the design of flood preparedness and mitigation activities;
- Designing and implementing early warning systems to increase outreach to socially excluded groups including women;
- Building the capacity of women (or women-led organizations) to better understand and use early warning information; and
- Mainstreaming gender-sensitive approaches in various DRM policy, institutional and legal framework to be supported under the Project.

#### *Adverse Impacts on Subsistence Fishing*

Elimination or reduction of flood plains may increase flood risk and may adversely affect riverine fisheries which are adapted to the natural flood cycles. This will result in a reduction in the recruitment to the floodplain fish populations as a whole, and to both the artisanal and commercial fisheries resulting from loss of river-flooded grasslands providing potential spawning nursery areas. By containing flows within embankments (levees or dykes), impeding seasonal floodplain inundation, the floodplain area exposed to inundation is restricted. Embankments that are too close to the main channel may decrease the natural heterogeneity of the flood plain, and impede the creation of new side channels and wetland areas. This reduction in habitat heterogeneity can dramatically affect fish populations, as many backwaters that were periodically connected to the main watercourse during the river floods no longer receive seasonal flows. These backwaters can

be critical breeding and feeding areas for fish.

*Mitigation measures*

- To minimize the risks, water drained out and released from flood plain should be temporarily stored in retention ponds to minimize impact on riverine fishery;
- Reduce the risk by designing and constructing the embankment structures considering their most minimal effects on existing fisheries and other community livelihood sources by changing embankment routes;
- As a risk reduction measure, involve the local communities in the decision making process of the design and construction of the embankments in the interest of socially desirable outcomes;
- Reduce the risks by establishing a workable Grievance Redress Mechanism should be put in place to address the community complaints.

***Damages to the Existing Infrastructure and Institutions***

The flood control and protection projects may affect roads, private and government infrastructures, and canal networks in the project target *woredas*/communities located both in upstream and downstream areas. The dyke construction may affect some of the public institutions along the river course as it increases the river volume which can damage the infrastructures particularly in downstream areas during high flooding. Moreover, unless the silt is removed from the river courses, roads and bridge can also be exposed to damage.

*Mitigation measures*

In order to avoid and/or minimize the possible impacts:

- Reduce the risk by designing and constructing dyke alignments by minimizing or avoiding possible damages on existing infrastructures and institutions.
- Minimize the risk by locating structures and underground installations in consultation and cooperation with relevant large-scale development projects and economic establishments in the areas.
- Change dyke route or design, as risk reduction measure, in such a way that they avoid possible damages on different institutions and infrastructures.
- Cooperate with public services providers in the area to avoid service delivery disruptions, and timely notify service provision temporary interruptions.

***The Risk of Social Tension and Conflict***

- Construction activities may require some land acquisition or restriction of access. In case no fair compensation is provided, this may be a cause for conflicts.
- Temporary or permanent restriction of access due to construction activities may be also a source of conflicts for people seeking passage.

- The denial of access to the traditional communal pasturelands causing scarcity of grazing and bruising resources on which the livestock heavily rely may also be a cause for conflict at least at the initial stage of project implementation.
- The restraining of agro-pastoral communities living along the river course from engaging in their traditional flood retreat cultivation practices is also a potential source of conflict.
- Conflict may arise from opposing views on the type of flood risk reduction intervention desired, where the main factor would be the competition for resources or the potential impact of works on the economic activities of the local population.
- Conflicts may also arise between contiguous ethnic groups or clans, or in some instances even between *woredas* as a result of a sizable area of land being relocated/transposed following a structural intervention of a cut-off drains. Such structures are dug across a slope to intercept surface runoff and carry it safely to an outlet such as a canal or stream, resulting in claims and counterclaims of a repositioned land.
- Issues relating to local employment and the procurement of goods and services. Communities demand that contractors/companies of flood infrastructures hire labor and services locally as a means of improving the living standards of local communities.
- Resettlement of communities. Flood infrastructure projects that are in the Project's interest may involve the forced expropriation of land and the resettlement of communities in other locations, which could potentially be a source of social tension and conflict.

#### *Mitigation measure*

- Developing a conflict-sensitive analysis which includes participatory social mapping, inclusivity, cost-benefit ratio, effects on traditional livelihoods, and compensation and resettlement plan.
- Consult project affected communities where to construct the structure that will allow them to have access to the waters for irrigation, grazing and other domestic uses.
- The affected have to be compensated with a plot of land proportional to size lost as replacement from community land, if available, or be paid a duly assessed compensation.
- Provide adequate compensation for the property loses and damages;
- Compensatory measures need to include the settling of displaced farm and pastoral households and the provision of irrigated pasture for pastoral villagers.
- Grievance Redress Mechanism should be put in place to address the community complaints.
- Make good use of the existing customary/informal dispute/conflict mediation institutions to address the social conflicts.
- The flood control dyke construction should be from downstream to upstream by properly estimating the controlled river volume at downstream ends.
- The water of the river should be controlled by *water regulating structure* that can be *opened* and *closed* as necessary. This will enable to protect flooding of settlements and property,

while as the same time providing access to water for customary pastoral grazing and irrigation practices.

- The building of small bridges should be considered as part of the dyke design and construction to ease the movement of humans and livestock.
- The construction of the flood control dyke should incorporate into its design a regulating structure allowing communities to grow horticultural crops and graze their animals. This will help to secure the safety of the dyke by way of constraining people from causing - damage by breaking off the dyke for water intake that may create flooding problem.
- Carry out assessment study on water demand and availability.
- Community consultations and consensus with upper and downstream community.

### ***Labor Influx and Associated Risks***

Again, in the context of IDRMP, during subproject implementation of flood risk control and reduction civil works, there will be the influx of workers and their accompanying followers which can lead to potential adverse social impacts on local communities, especially if the communities are rural, remote or small. Such adverse impacts are usually exacerbated by local-level low capacity to manage and absorb the incoming labor force, and specifically when civil works are carried out in, or near, vulnerable communities and in other high-risk situations. For further information please see also the LMP prepared for this project.

While many of these potential impacts may be identified in a project's Environmental and Social Impact Assessment (ESIA), they may only become fully known once a contractor is appointed and decides on sourcing the required labor force. This means that not all specific risks and impacts can be fully assessed prior to project implementation, and others may emerge as the project progresses.

The adverse social impacts are the following:

- *Risk of social conflict:* Conflicts may arise between the local community and the construction workers, which may be related to religious, cultural or ethnic differences, or based on competition for local resources. Tensions may also arise between different groups within the labor force, and pre-existing conflicts in the local community may be exacerbated.
- *Impacts on community dynamics:* Depending on the number of incoming workers and their engagement with the host community, the composition of the local community, and with it the community dynamics, may change significantly. Pre-existing social conflict may intensify as a result of such changes.
- *Gender-based violence:* Construction workers are predominantly younger males. Those who are away from home on the construction job are typically separated from their family and act outside their normal sphere of social control. This can lead to inappropriate behavior such as sexual harassment of women and girls, exploitative sexual relations, and

illicit sexual relations with minors from the local community and nearby schools. Even a modest influx of male labor may also lead to an increase in exploitative sexual relationships whereby women and girls are forced into sex work.

- *Child labor and school dropout:* Relative increase in opportunities for the host community to sell goods and services to the incoming workers can lead to child labor to produce and deliver these goods and services, which, in turn, can potentially lead to enhanced school dropout.
- *Influx of additional population (“followers”):* Although this risk may not be big enough as in the case of large infrastructural investment projects with a longer timeframe, still people can migrate to IDRMP subproject area in addition to the labor force, thereby exacerbating the problems of labor influx. These can be people who expect to get a job with the project, family members of workers, as well as traders, suppliers and other service providers (including sex workers), particularly in areas where the local capacity to provide goods and services is limited.
- *Increased burden on and competition for public service provision:* The presence of construction workers and service providers (and in some cases family members of either or both) can generate additional demand for the provision of public services, such as water, electricity, medical services, transport, education and social services.
- *Increased risk of communicable diseases and burden on local health services:* The influx of people may bring communicable diseases to the subproject area, including sexually transmitted diseases (STDs), or the incoming workers may be exposed to diseases to which they have low resistance. This can result in an additional burden on local health resources.
- *Increased risk of illicit behavior and crime:* The influx of workers and service providers into communities may increase the rate of crimes and/or a perception of insecurity by the local community. Such illicit behavior or crimes can include theft, physical assaults, substance abuse, and prostitution. Local law enforcement may not be sufficiently equipped to deal with the temporary increase in local population.
- *Local inflation of prices and pressure on accommodation and rent:* A significant increase in demand for goods and services due to labor influx may lead to local price hikes and/or crowding out of community consumers. There may also be increased demand for accommodations, which again may lead to price hikes and crowding out of local residents.

#### *Mitigation measures*

- Reduce labor influx by tapping into the local workforce. The most effective mitigation measure against labor influx is to avoid or reduce it. Depending on the size and the skill level of the local workforce, a share of the workers required for the project should be recruited locally.
- Where it is feasible, train local workers to meet project requirements.

- Develop an induction program including a code of conduct for all workers. The code of conduct will address the following aspect: Respect for local residents; No hunting or unauthorized taking of products or livestock; Zero tolerance of illegal activities such as child sexual exploitation and underage sex, prostitution, harassment of women, gender based violence, purchase or use of illegal drugs, fighting; Disciplinary measures and sanctions (e.g. dismissal) for infringement of the code of conduct and/or company rules; Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of crimes including gender-based violence.
- Provide cultural sensitization training to improve awareness of workers to local cultures, traditions and lifestyles.
- The provision of HIV and AIDS education and information for all the migrant construction worker, including the local workforce.
- Voluntary Counseling and Testing services to the workers and community members
- Plan for population increase and consequent demand on public utilities.
- Dialogue between the local leadership, farmers/pastoralists and immigrants.
- Build the capacity and work closely with local law enforcement

#### ***The risk of operational concerns due to remoteness and insecurity***

It is to be expected that a good number of the IDRMP subproject activities related to flood risk control and reduction will be implemented in remote and far-flung sites in the selected river basins. Understandably, some of these areas could still be located in conflict-affected regions experiencing medium to high insecurity.

One of the most important sources of tension and insecurity particularly in the lowlands of the targeted basins is the longstanding and recurring inter-ethnic conflicts. Due to heavy dependence on their cattle and herds for their livelihoods, various nomadic pastoral and agro-pastoral groups inhabiting the flood plains in Awash and Omo-Gibe River basins have frequently clashed with one another over the best grazing lands and water points. The most frequent and widely prevalent resource-based conflicts are those between the Afar and Karrayu, the Afar and Issa Somali, the Afar and Arsi Oromo, and the Afar and Ittu in the middle and lower Awash Valley; and between the Hamar and Dassanetch (Geleb), the Borena and Arbore, the Borena and Dassanetch, and the Ngnagatom and Turkana in lower flood plains of the Omo-Gibe Basin. These inter-ethnic tensions and conflicts, no doubt, would pose contextual security risks in the implementation of basin-level flood risk reduction investment projects, including difficulties in monitoring and supervising social risks and grievance management, in the targeted basins.

#### ***Mitigation measures***

- Continuously monitor the situation in project areas to enable early detection, as much as possible, of conflict to enable necessary adjustments.

- In addition to the existing or traditional method of operating, adopt or add the remote management approaches to subproject implementation, monitoring and supervision as a reactive, temporary responses to insecurity in project locations.
- Remote management is ‘an operational response to insecurity’, involving the withdrawal or drastic reduction of Project staff from subproject sites/field, transferring greater program responsibility to local staff or local partner organizations, and overseeing activities from a different location.
- Capacity building for local staff and partners (basin and sub-basin level ESMF implementation structures/committees and IDRMP Basin Development Office Steering Committee members).
- Prepare Security Management Plan (SMP) to address security concerns and associated operational risks.

### ***The Potential Risk of Elite Capture***

Power over local decision making has always been, and continues to be concentrated among elites. These are actors who have disproportionate influence in the project design and implementation process as a result of their superior social, political or economic standing. In the implementation of IDRMP flood reduction/protection infrastructures in the selected subproject areas, there will be the risk of elite capture which refers to situations where elites (grassroots level basin and sub-basin ESMF implementation structures/committees) shape the development processes according to their own priorities and/or appropriate development resources for private gain. As a result, in the areas where the flood control and reduction projects are implemented, community involvement in choosing, constructing and managing the operations may be dominated by these elites, who tend to be better educated, able to dedicate more time to community activities, and better connected with outsiders and project authorities. As a result, elite capture poses a major challenge in IDRMP subproject operations.

While elite capture does not eliminate all of the benefits of subproject investment infrastructures, it does have the potential to greatly decrease the effectiveness of subproject operations. In order to most effectively promote social accountability, project authorities/implementers (the federal Project Management Units (PMU), basin and sub-basin offices of the targeted basins, and IDRMP Basin Development Office Steering Committees) should not only be aware of the structural conditions which make elite capture more likely, but also sensitive to the fact that communities must be sufficiently empowered before they can benefit from the operations. Negative elite involvement is particularly likely to occur when: (a) Elites have significant control over community decisions and/or the autonomy to craft rules which discourage community involvement in the project; (b) Projects are initiated before sufficient capacity-building measures have been implemented to ensure that community members have the skills and knowledge necessary to effectively advocate for their position with local elites; and (c) The project moves forward with implementation before clear rules and processes have been established to guide its

activities.

#### *Mitigation measures*

- Reduce the risk by ensuring that community members are aware of subproject operation's purposes and know committee members and their roles.
- Minimize the risk by monitoring and following up Project implementers work on information disclosure and transparency, especially related to project budgets, financing, contracting, and procurement.
- Reduce the risk by making certain that community members are involved in all stages of the project cycle from setting priorities, to monitoring progress and assessing results.
- Ensure, as a risk reduction action, that the selection of the leadership at the grassroots level are carried out in a democratic and transparent manner so that members of the relevant committees are less dominated by elites.
- Put in place a participatory Monitoring & Evaluation in which the various stakeholders share control over the content, the process and the results of the M&E activity and engage in identifying and implementing corrective actions throughout the project cycle.
- Reduce the risk by developing complaint handling mechanisms to provide stakeholders with opportunities to report elite capture to project authorities through anonymous channels.

In sum, in terms of rating the social risks, based on the findings of this ESMF, it has been found that the implementation of IDRMP components will be **high**. Of course, the physical investment subprojects will have significant positive impacts on the communities in the intervention *woredas* by way of providing flood risk reduction infrastructures which minimizes and/or prevents downstream flooding and prevents damages to institutions. Such structures will also help avoid losses in business, besides safeguarding the subsistence-based livelihoods of pastoralists and smallholder farmers. The employment opportunities especially to casual works in the community are of benefit both socially and economically to women and unemployed youths in the rural settings. Not least, implementing flood protection and control activities through IDRMP in the flood prone area will have significant contribution for promoting trust and amicable relationship between the government and resident, and thus promotes good governance, equity and inclusiveness.

However, the basin-level flood risk reduction investments of the project under sub-component 2.1 require land for the management of various subproject interventions such as river/channel widening; flood embankments; dykes; water transfer structures; earth dams and gabions; retaining wall; and water ponds. Implementation of these envisaged integrated flood control and management projects will entail temporary or permanent land loss and acquisition owing to the location of the various components of the project. In particular, in the process of acquiring land for the stated purposes, it is highly likely that pastoral and agro-pastoral households and women



as vulnerable community groups will disproportionately be affected by the loss or restriction on the use and access of individually or communally held assets with the resultant adverse social impacts on irrigation culture and associated loss of livelihoods. Again, during subproject implementation of flood risk control and reduction civil works, there will be an influx of workers and their accompanying followers which can lead to potential adverse social impacts on local communities. Such adverse impacts are usually exacerbated by local-level low capacity to manage and absorb the incoming labor force, and specifically when civil works are carried out in, or near, vulnerable communities and in other high-risk situations. Other potential social risks could be related to economic displacement, damages to existing infrastructure and institutions, restriction of access to movements, occupational health and safety hazards/risks, damage to cultural heritage and historic and ritual sites, impacts on public health, infectious and communicable diseases impacts, GBV, child labor, the risk of exclusion/discrimination, social tension and conflict, and the risk of operational concerns due to remoteness and insecurity.

Tables below provides social management plans of the proposed IDRMP.

**Table 8: Environmental and Social Management Plan – Social Aspects**

(Note: This environmental and social management plan is an indicative plan and it shall be further developed/updated for specific sub-projects before project implementation. Also, Contractor's-ESMP (C-ESMP) shall be prepared by the sub-project contractors before project implementation.)

[illegible]

	2.		

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
<b>Component 1: Strengthening Institutional and Coordination Capacity for DRM &amp; Component 4: Project Management and Implementation Support</b>					
Institutional Capacity	<ul style="list-style-type: none"> <li>Lack of institutional capacity at stakeholder organizations;</li> <li>The absence of an ES risk management unit and ES specialists;</li> <li>Capacity gap at <i>woreda</i>/grassroots levels in relation to safeguard issues;</li> <li>Inadequate transport logistics, office space, and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Put in place, as a risk reduction measure, a separate ESS unit at federal level in MoWE and EDRMC.</li> <li>Minimize the risk through deploying the relevant professional staff in the management of ES issues.</li> <li>Reduce the risk by delivering capacity enhancement trainings for the safeguard professionals.</li> <li>Minimize the risk by raising the awareness of SC in respect to their responsibilities.</li> <li>Reduce the risk by strengthening the institutional capacity of PMU and PCU, particularly basin and sub-basin offices through the provision of transport logistics and office equipment.</li> <li>Reduce the risk by carrying out tailored and customized capacity building trainings for basin office/<i>woreda</i>/ grassroots ESMF implementing structures/committees.</li> </ul>	PMU (MoWE/BDA), PCU (EDRMC), and Steering Committee (SC) Basin and sub-basin offices and basin office steering committee (SC)	Throughout the implementation period	Part of project implementation budget
Monitoring and Evaluation (M&E)	Inadequate attention given to the importance of M&E	<ul style="list-style-type: none"> <li>Reduce the risk by introducing participatory monitoring and evaluation (PME) system;</li> <li>Minimize the risk by ensuring that social and environmental safeguards issues constitute the core of M&amp;E exercise</li> </ul>	PMU, PCU	Throughout the implementation period	Part of project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
Project Implementation support (GRM)	IDRMP's grievance redress mechanism stipulated in the ESMF may not uniformly be used during the implementation	<ul style="list-style-type: none"> <li>• Reduce the risk by ensuring that IDRMP develop and uses its own in-built grievance redress mechanism;;</li> <li>• Minimize the risk by enhancing the capacity of individuals who will be involved in GRM processes through appropriate trainings.</li> <li>• Reduce the risk by strengthening the traditional dispute settlement institutions through trainings, particularly women and girls rights.</li> <li>•</li> </ul>	PMU, Basin Offices and Basin Offices SC	Throughout the implementation period	Part of project implementation budget
Project implementation support (Staff Turnover)	The risk of staff turnover as a result of poor motivation (low remuneration and inadequate incentive scheme)	<ul style="list-style-type: none"> <li>• Minimize the risk by introducing competitive salary scale and other benefit packages to recruit and retain competent technical staff.</li> <li>• Reduce the risk the fulfillment of better infrastructure bases, and support for the Project by the higher level IDRMP structures.</li> </ul>	PMU, PCU, and SC	Throughout the implementation period	Part of project implementation budget
<b>Potential Negative Impacts during the Construction Phase (Component 2)</b>					
All structural sub-projects	Loss of farm and grazing lands (land acquisition)	<ul style="list-style-type: none"> <li>• Mitigate the risk through the restoration of productive lands affected by temporary activities.</li> <li>• Minimize the anticipated risk by scheduling the construction during dry season when the land is not under cultivation;</li> <li>• Minimize or reduce risks by providing adequate compensation for the property loses and damages;</li> <li>• Minimize or reduce the risks by putting in place mechanisms to redress project-induced asset loses, restriction of access and/or use to natural resources;</li> <li>• Mitigate the risk by making sure that the affected are compensated with a plot of land proportional to size lost as replacement;</li> <li>• Minimize the risk by putting in place a Grievance Redress Mechanism to address the community complaints.</li> </ul>	Designing agency Project contractor Basin-level steering committee	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
All structural sub-projects	Economic displacement induced by subproject implementation	<ul style="list-style-type: none"> <li>Mitigate the risk by adopting compensatory measures, and these include the settling of displaced farm and pastoral households and the provision of irrigated pasture for pastoral villagers;</li> <li>Mitigate the risk by creating of employment opportunities to strengthen the income of local communities</li> <li>Minimize the risk by making sure that the resettlements of the displaced is not between the flood control structure alignments;</li> <li>Minimize the risk by putting in place a workable Grievance Redress Mechanism to address the community complaints.</li> </ul>	Basin-level steering committee <i>Woreda</i> compensation committee	Construction phase	Part of sub-project implementation budget
All structural sub-projects	Restriction of access to movements	<ul style="list-style-type: none"> <li>Avoid the risk by consulting the communities where such assess restrictions exist and on how to harmonize structures with their demands and needs.</li> <li>Anticipate and avoid the risk by designing and constructing dyke crossing structures such as bridges enables maintaining the dyke quality, sustainability and attainment of community demands.</li> </ul>	Project contractors	Construction phase	Part of sub-project implementation budget
All structural sub-projects	Noise disturbance and increased vehicle traffic	<ul style="list-style-type: none"> <li>Minimize the risk of noise disturbance by ensuring that the equipment of subprojects operate only during day time.</li> <li>Avoid the risk by making sure that movement of all project vehicles and personnel will be restricted to within work areas.</li> <li>Minimize the risk by providing construction workers with safety device for protection of ears (earmuffs and ear-plugs etc.)</li> <li>Avoid vehicle traffic through the communities as far as possible and project routes should be authorized by the Safeguard specialists.</li> <li>Minimize the risk by keeping vehicle speeds low, and horns will not be used while passing through the communities.</li> </ul>	<i>Woreda</i> police station Project contractor	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Avoid nighttime traffic near the communities.</li> <li>Minimize the risk by limiting working hours for construction activities within/near the communities to between 8 am and 6 pm.</li> <li>Minimize the risk through maintaining liaising with the community.</li> <li>Minimize the risk by putting in place an effective Grievance Redress Mechanism to address the community complaints</li> </ul>			
All structural sub-projects	Occupational health and safety hazards/risks	<ul style="list-style-type: none"> <li>Minimize the risk by ensuring the presence and continued use of normal control measures, including personal protective equipment (PPE).</li> <li>Minimize the risk by providing compulsory HIV/AIDS and STDs, and COVID-19 awareness creation and prevention training.</li> <li>Minimize the risk by providing and have all workers wear face coverings (i.e., cloth face coverings or masks).</li> <li>Minimize the risk by training workers on COVID-19 policies and procedures in a language they understand.</li> <li>Reduce the risk by ensuring that tender documents include standard best practice clauses.</li> <li>Reduce by the risk by employing the local people for labor works.</li> </ul>	Local labor and social affair office Local health office Local EPFCC office Local roads authority offices Project contractor	Construction phase	Part of sub-project implementation budget
All structural sub-projects	Damage to cultural heritage and historic and ritual sites during excavation and construction operations	<ul style="list-style-type: none"> <li>Avoid the risk by first conducting public consultations and engaging cultural or religious leaders and local authorities.</li> <li>Avoid the risk by first identifying areas of cultural, historic and or religious significance.</li> <li>Avoid the risk by involving the local community in locating appropriate project sites and access routes that avoid such resources.</li> <li>Mitigate the risk, if disturbance is unavoidable, by reaching agreements on</li> </ul>	Basin-level steering committee Designing agency Local culture and tourism offices	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<p>mitigating measures with stakeholders, particularly project affected communities.</p> <ul style="list-style-type: none"> <li>• If excavation encounters archaeological artifacts, halt construction and notify relevant authorities, and mitigate properly.</li> <li>• Avoid the risk by designing and constructing the dyke or other flood reduction structure routes in harmony with the cultural, religious and historical heritage sites along the river course.</li> <li>• Minimize the risk by including or adding a clause for chance find procedures in construction contract agreements.</li> <li>• Reduce the risk by notifying an institution responsible for culture, religious and historic heritage sites protection and conservation, etc.</li> <li>• Minimize the risk by putting in place a workable Grievance Redress Mechanism to address community complaints.</li> </ul>			
All structural sub-projects	Infectious and communicable diseases impacts	<ul style="list-style-type: none"> <li>• Minimize the risk by ensuring that the provision of HIV and AIDS education and information shall form part of the delivery and health care services.</li> <li>• Reduce the risk by working closely with respective government departments, local NGOs, and/or faith-based organizations in HIV and reproductive health;</li> <li>• Reduce the risk by constantly making available VCT services to the workers and community members;</li> <li>• Reduce the risk by ensuring that all subproject sites/workplaces make COVID-19 information from relevant health agencies readily available to their workforce;</li> <li>• Minimize the risk by promoting continuous sensitization of the workers and community members about HIV/AIDS and other STDs.</li> </ul>	<p>Woreda health offices</p> <p>Woreda labor and social affairs offices</p> <p>Project contractor</p>	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
All structural sub-projects	Improper campsite impacts	<ul style="list-style-type: none"> <li>Avoid the risk by locating construction camps at socially and environmentally safe sites;</li> <li>Avoid the risk by consulting and liaise with the appropriated local leaders and community representatives and residents regarding the location of excavation sites;</li> <li>Locate workers camp away from communities' settlements in order to avoid social conflicts,;</li> <li>Minimize the risk by informing local authorities responsible for health, religious and security;</li> <li>Minimize the risk by promoting massive awareness campaigns on GBV- SEA/SH and early child marriages practices to construction workers, parents, teachers, pupils and students and local leaders.</li> </ul>	<p>Woreda health offices</p> <p>Woreda labor and social affairs offices</p> <p>Woreda police office</p> <p>Project contractor</p>	Construction phase	Part of sub-project implementation budget
All structural sub-projects	The risk of GBV-Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH)	<ul style="list-style-type: none"> <li>Minimize the risk by assigning a gender expert at the PMU/PCU and paid focal person at the basin and sub-basin office levels;</li> <li>Apply GM strategy, by way of reducing the risk, in all the project cycle through application of gender analysis;</li> <li>Reduce the risk by promoting mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women;</li> <li>Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence;</li> <li>Introducing a Worker Code of Conduct as a risk reduction measure as part of the employment contract; [</li> </ul>	<p>PMU/PCU</p> <p>Project contractor</p> <p>Woreda law enforcement offices</p>	Construction phase	Part of sub-project implementation budget



Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Ensure these codes of conduct are publicly disclosed in local languages and are widely accessible to all workers;</li> <li>• As a risk reduction measure, ensure contractors adopt a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence;</li> <li>• Involving relevant authorities such as law enforcement, community leaders in handling sexual abuse in project communities and ensure that where relevant, referral pathways for eventual cases are identified;</li> <li>• Reduce the risk by way of delivery of periodic mandatory training on GBV to all workers, including contractors, subcontractors;</li> <li>• Training grievance redress committee to handle issues of sexual abuses perpetrated by project workers;</li> <li>• Develop safe, confidential and accessible grievance reporting, referral and support systems for workers and local communities as a way to reduce the risk;</li> <li>• Minimize the risk by providing safe, secure and separate living spaces for male and female construction workers;</li> <li>• Provide lighting around project sites, including around latrines and access routes.</li> <li>• Install separate, lockable latrines for female construction workers;</li> <li>• As a risk reduction measure, develop M&amp;E system with clear indicators to follow up progress made and challenges encountered.</li> </ul>			

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
All structural sub-projects	The risk of child labor	<ul style="list-style-type: none"> <li>• By way risk reduction, provide trainings to ensure contractors are informed of legal consequences of child labor;</li> <li>• Ensure that contractors document and verify age of all prospective workers prevent employment or engagement of child labor as risk reduction measure;</li> <li>• Prepare a separate LMP which contains risk reduction measures, including terms and condition of employment and minimum age;</li> <li>• Periodic monitoring to ensure that terms and conditions of all project's workers are in accordance with the requirements of national law and ESS2 as indicated in the LMP;</li> <li>• Reduce the risk by establishing a GRM through which workers will be able to lodge their complaints, concerns, difficulties.</li> </ul>	PMU Basin level steering committee	Construction phase	Part of sub-project implementation budget
All structural sub-projects	Labor influx and associated risks	<ul style="list-style-type: none"> <li>• Reduce labor influx by tapping into the local workforce. The most effective mitigation measure against labor influx is to avoid or reduce it;</li> <li>• Where it is feasible, train local workers to meet project requirements;</li> <li>• As a risk reduction measure, develop an induction program including a code of conduct for all workers;</li> <li>• As an integral part of the risk reduction measures, provide cultural sensitization training to improve awareness of workers to local cultures, traditions and lifestyles;</li> <li>• The provision of HIV and AIDS education and information as a means to reduce risk for all the migrant construction worker, including the local workforce;</li> </ul>	Project contractors PMU Basin and sub-basin offices and basin office steering committee (SC). <i>Woreda</i> Health Offices	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Voluntary Counseling and Testing services to the workers and community members;</li> <li>Plan for population increase and consequent demand on public utilities;</li> <li>Dialogue between the local leadership, farmers/pastoralists and immigrants;</li> <li>Build the capacity and work closely with local law enforcement.</li> </ul>			
<b>Potential Negative Impacts during the Operation Phase</b>					
All structural sub-projects	Aggravates downstream flood problems	<ul style="list-style-type: none"> <li>Reduce downstream flooding risk through periodic monitoring, surveillance, and inspections of flood control structures</li> <li>Reduce consequences through preparing nonstructural measures such as early warning systems, emergency preparedness plans, emergency response capacity building</li> <li>Minimize anticipated risks through enhanced hydromet monitoring/gauging.</li> <li>Mitigate the risks through establishing effective communication channels among local administrations to enable flood early warning.</li> </ul>	BDA Basin offices EMI Woreda Water and Energy Offices	Operation phase	Part of subproject operation and implementation budget
All structural sub-projects	Restrictions of traditional water uses outside flood protection structures	<ul style="list-style-type: none"> <li>Anticipate and avoid the risk by consulting project affected communities where to construct the structure;</li> <li>Avoid the risk by designing and constructing water intake points with regulating structures that will enable the river water reach them.</li> </ul>	BDA Basin offices Designing agency	Operation phase	Part of subproject implementation budget
All structural sub-projects	Adverse impacts on subsistence fishing	<ul style="list-style-type: none"> <li>To minimize the risk, water drained out and released from flood plain should be temporarily stored in retention ponds;</li> <li>Reduce the risk by designing and constructing the embankment structures considering their most minimal effects on existing fisheries by changing embankment routes;</li> <li>As a risk reduction measure, involve the local communities in the decision making process of the design and construction of the embankments;</li> </ul>	Designing agency Project contractor	Construction and Operation phase	Part of subproject implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Reduce the risks by establishing a workable Grievance Redress Mechanism should be put in place to address the community complaints.</li> </ul>			
All structural sub-projects	Damages to the existing infrastructure and institutions	<ul style="list-style-type: none"> <li>Reduce the risk by designing and constructing dyke alignments by minimizing possible damages on existing infrastructures and institutions;</li> <li>Minimize the risk by locating structures and underground installations in consultation and cooperation with relevant large-scale development projects and economic establishments in the areas.</li> <li>Change dyke route or design, as risk reduction measure, in such a way that they avoid possible damages on different institutions and infrastructures.</li> <li>Cooperate with public services providers in the area to avoid service delivery disruptions, and timely notify service provision temporary interruptions.</li> </ul>	Designing agency Project contractor	Construction and Operation phase	Part of subproject implementation budget
All structural sub-projects	Impacts on public health (waterborne, communicable and vector-borne diseases)	<ul style="list-style-type: none"> <li>Minimize the risk by ensuring that these subprojects are accompanied by education for improved sanitation and hygiene;</li> <li>Minimize the risk by designing and maintaining drainage lines subprojects properly to have the capacity of removing runoff waters from the residential areas before it stagnates.</li> </ul>	Woreda health offices Project contractor Designing agency Woreda health offices	Construction and Operation phase	Part of subproject implementation budget
All structural sub-projects	The risk of exclusion/discrimination of underserved and other vulnerable groups	<ul style="list-style-type: none"> <li>Minimize the risk by making use of and follow up the strict observation of the government policy on gender and other forms of social inclusion;</li> <li>Reduce the risk through conducting periodic and specific field identification of key issues of exclusion, discrimination and marginalization of women and other vulnerable groups;</li> </ul>	PMU/PCU BDA basin offices Basin level SC Grassroots ESMF implementing structures	Operation phase	Part of subproject implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Assess, as a risk reduction measure, the constraints and opportunities in the Project for encouraging involvement of these groups;</li> <li>Assess the organizational capacities of the implementing organizations, and develop Action Plan;</li> <li>Adopt the risk minimization measure of utilizing community structures and local administration to mobilize minority groups to participate in meetings and consultations,</li> <li>Provide as risk reduction measure local language interpreters to ensure understanding and ability to give feedback during engagement.</li> <li>Target women and youth in project consultations and activities for their meaningful inclusion in project decisions.</li> <li>Minimize the risk by ensuring involvement of women in the design of flood preparedness and mitigation activities;</li> <li>Designing and implementing early warning systems as a risk minimizing measure to increase outreach to socially excluded groups;</li> <li>Building the capacity of women (or women-led organizations) to better understand and use early warning information;</li> <li>Reduce the risk by mainstreaming gender-sensitive approaches in various DRM policy.</li> </ul>			
All structural sub-projects	The risk of social tension and conflict	<ul style="list-style-type: none"> <li>Reduce the risk by developing a conflict-sensitive analysis;</li> <li>Minimize the risk by consulting project affected communities where to construct the structure;</li> <li>Reduce the risk through carrying out assessment study on water demand and availability.</li> <li>To reduce the risk, the flood control dyke construction should be from downstream to upstream;</li> </ul>	PMU Basin level SC Grassroots ESMF implementing structures	Operation phase	Part of subproject implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• The water of the river should be controlled by water regulating structure that can be opened and closed as necessary;</li> <li>• The building of small bridges should be considered as part of the dyke design and construction to ease movement of humans and livestock;</li> <li>• The construction of the flood control dyke should incorporate into its design a regulating structure allowing communities to grow horticultural crops and graze their animals;</li> <li>• The affected have to be compensated as a risk mitigation action with a plot of land proportional to size lost as replacement;</li> <li>• Compensatory risk mitigation measures need to include the settling of displaced farm and pastoral household;</li> <li>• Make good use of the existing customary/informal dispute/conflict mediation institutions to address the social conflicts;</li> <li>• Community consultations and consensus with upstream and downstream community.</li> <li>• Reduce the risk by putting in place a Grievance Redress Mechanism to address the community complaints.</li> </ul>			
All structural sub-projects	The risk of operational concerns due to remoteness and insecurity	<ul style="list-style-type: none"> <li>• Minimize the risk by continuously monitoring the situation in project areas to enable early detection of conflict;</li> <li>• Adopt, as a risk reduction measure, the remote management approaches to subproject implementation, monitoring and supervision;</li> <li>• Reduce the risk by conducting capacity building for local staff and partners (basin and sub-basin level ESMF implementation structures/committees and IDRMP Basin Development Office Steering Committee members).</li> </ul>	PMU Basin offices	Operation phase	Part of subproject implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Avoidance/Reduction/Mitigation Measures	Institutional Responsibility for Implementation	Implementation Timeframe	Implementation Budget
All structural sub-projects	The risk of elite capture	<ul style="list-style-type: none"> <li>• Reduce the risk by ensuring that community members are aware of subproject operation's purposes and know committee members and their roles;</li> <li>• Minimize the risk by monitoring and following up Project implementers work on information disclosure especially related to project budgets, financing, contracting, and procurement;</li> <li>• Reduce the risk by making certain that community members are involved in all stages of the project cycle;</li> <li>• Ensure, as a risk reduction action, that the selection of the leadership at the grassroots level are carried out in a democratic and transparent manner;</li> <li>• Put in place a participatory Monitoring &amp; Evaluation;</li> <li>• Reduce the risk by developing complaint handling mechanisms;</li> </ul>	PMU Basin offices Basin level SC Grassroots ESMF implementing structures	Operation phase	Part of subproject implementation budget

## 7.5 Environmental and Social Monitoring Plan

The environmental and social monitoring plans for the project are presented in two consecutive tables below.

***Table 9: Environmental Monitoring Plan***

(Note: This monitoring plan is an indicative plan and it shall be further developed/updated for specific sub-projects before project implementation.)

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
All structural sub-projects	Noise and vibration impact on wildlife	<ul style="list-style-type: none"> <li>Avoid using heavy construction machinery during night-time</li> <li>Carryout regular maintenance on the construction machineries</li> <li>Select transport routes to minimize noise pollution in sensitive areas</li> <li>Use non-mechanized construction where possible including the use of local labor</li> <li>Install noise silencer on the construction machineries</li> <li>Select sub-projects away from wildlife habitat during sub project screening</li> </ul>	Measurement of noise sound level at construction sites	Every day and night during construction work, periodical sound level measurements	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	20,000
All structural sub-projects	Impact on air quality	<ul style="list-style-type: none"> <li>Regularly spray water (multiple times in a day where necessary) to suppress the generation of dust during construction, particularly during use of gravel roads and dirt tracks.</li> <li>Cover with mulch and vegetation where applicable</li> </ul>	Measurement of NOs, Sulphur dioxide, CO <sub>2</sub> , Carbon monoxide, dust particle, visibility etc.	Every day during construction work, periodical concentration level measurements	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	20,000



Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Use local labor when widening river channels by excavating river banks</li> <li>All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and with proper maintenance to minimize air pollution</li> </ul>					
All structural sub-projects	Impacts due to construction camp site and other ancillary facilities	<ul style="list-style-type: none"> <li>Locate construction camps away from environmentally, socially, and culturally sensitive sites.</li> <li>Locate construction camps away from local communities' settlement areas, villages, and towns.</li> <li>Get the local authorities' concurrence in locating construction camps.</li> <li>Provide amenities in the camp.</li> <li>Provide potable and reliable water supply for the camp.</li> <li>Provide reliable and sufficient energy supply to the camp.</li> <li>Provide proper waste storage area or facility.</li> </ul>	Amenities working status, water supplied, energy supplied, waste collected, security incidents	Every 3 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	20,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>• Provide sufficient ingress and egress from/to the camp with internal roads and storm drainage structures.</li> <li>• Provide reliable health care facility in the camp.</li> <li>• Provide around the clock security personnel to prevent unauthorized entrance to the camp.</li> </ul>					
All structural sub-projects (particularly embankments, dykes, retention ponds)	Impact due to borrow pits and quarry sites	<ul style="list-style-type: none"> <li>• Locate borrow pits and quarry sites away from settlement areas and important habitats</li> <li>• Select low-impact materials extraction methods that will make rehabilitation of the site easier</li> <li>• Topsoil and overburden should be removed separately and segregated for later use during site rehabilitation</li> <li>• Rehabilitate the pits and quarry sites to their natural ground level to minimize impact</li> <li>• Opportunities to create ecologically valuable habitats should be</li> </ul>	Visit borrow pits and quarry site to check status and rehabilitation of sites	Every 3 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	10,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		considered at the borrow pits and quarry sites					
All structural sub-projects	Impacts due to construction wastes	<ul style="list-style-type: none"> <li>Wastes have to properly transported and disposed to officially permitted and properly manage site</li> <li>Provide segregated waste receptacles within construction camps or storage areas</li> <li>Segregate and store hazardous waste in containers or specialized leak-proof plastic bags</li> <li>Provide spill containment storage volume</li> <li>Dispose hazardous materials only at designated disposal sites/facilities (if any) with permission from the concerned authorities</li> <li>Never dispose used oil and filters to the ground, use leak proof containers</li> <li>Provide Material Safety Data Sheet (MSDS) at the hazardous materials storage at all times</li> <li>Aware the construction crew and operators on</li> </ul>	Check the removal and appropriate disposal of construction waste	Every 3 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	10,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		proper handling of hazardous materials <ul style="list-style-type: none"> <li>• Use appropriate PPE while handling hazardous materials</li> <li>• Develop emergency spill or exposure procedures</li> <li>• Vehicles hauling construction debris or other waste from the sub-project sites shall cover any open load with a tarpaulin or other secure covering to minimize dust emissions and dropping of debris</li> </ul>					
All structural sub-projects	Impact of construction on soil quality	<ul style="list-style-type: none"> <li>• Restore the nutrient rich top soil to its original level upon completion of construction works</li> <li>• Top soil stripped should be stockpiled for rehabilitation of the area later</li> <li>• The topsoil should be uniformly spread onto areas to be rehabilitated</li> <li>• Provide temporary drainage channels and retention ponds in cases there is a danger of increased runoff that will aggravate soil erosion</li> </ul>	Nutrient level of top soil at the borrow pits and quarry sites after rehabilitation, rate of soil erosion and sedimentation	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	20,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Access roads should be located from fertile grounds and should be rehabilitated once their use is completed</li> <li>As much as possible, use existing access roads</li> <li>Vehicles should not drive on soil when it is wet to avoid further soil compaction</li> </ul>					
All structural sub-projects	Impact on surface water resource	<ul style="list-style-type: none"> <li>Maintain controlled flow in rivers and streams to allow downstream movement of water, sediment, and other transported materials that form the natural surface water system</li> <li>Construction wastes and other debris and oil spills shall be prevented from entering the nearby drainage system</li> <li>Protect water bodies ecosystem by properly managing construction wastes that will be generated during sub-projects implementation</li> <li>Provide secondary containment to hold on accidental spillage and prevent it from entering</li> </ul>	Controlled flow downstream, basic water quality parameters such as BOD, DO, PH	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction and operation phases	30,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<p>nearby water bodies and soil. The secondary containment should have the capacity to match or exceed the volume of fuel, solvents, and other materials to be contained.</p> <ul style="list-style-type: none"> <li>• Use a proper fueling nozzle or funnel to avoid splashing fuel during filling of vehicles and machines.</li> <li>• During filling of vehicle/machine tanks, monitor the progress of the filling so that it will not spillover. Also, let the nozzle or funnel drain before pulling out.</li> <li>• Develop emergency response instructions to manage accidental oil and chemical spills.</li> <li>•</li> </ul>					
All structural sub-projects (particularly drainage works)	Impacts due to channel smoothening and clearing riverine vegetation	<ul style="list-style-type: none"> <li>• Aquatic organisms and fishery habitat along the river courses should be carefully identified and channel smoothening and riverine vegetation clearing should be avoided or minimized</li> </ul>	Existence of riverine vegetation, diversity of aquatic species in the river and ponds	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/office, Woreda	Planning and construction phases	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Minimizing removal of native plant species or riverine vegetation</li> </ul>			agricultural office		
All structural sub-projects (particularly drainage works)	Impact on soil and groundwater due to disposal of dredging spoils	<ul style="list-style-type: none"> <li>Identify the physical and chemical composition of the dredging waste before removal</li> <li>Based on the physical and chemical composition of the dredging waste, identify appropriate removal and temporary storage methods and locations</li> <li>When transporting dredging waste to disposal site, care shall be taken to use a leakage free method so that dredging leachate will not escape</li> <li>The contractor should dispose the dredged spoils on a site dedicated for this purpose and officially permitted, depending on its contents</li> <li>The contractor should liaise with the concerned local authorities to aware them of the risks/impacts of the dredging waste and assist them (if needed) in selecting</li> </ul>	Disposed dredging spoils and disposal sites	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Construction phase	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		and preparing appropriate disposal site					
All structural sub-projects	Impact on flora	<ul style="list-style-type: none"> <li>Survey of sub-project areas shall be done by agricultural specialists (or botanists) prior to construction to identify, protect, or relocate endangered plant species.</li> <li>Embankment construction, modification of rivers channels, and other interventions on a known areas of biodiversity significance should be avoided or minimized</li> <li>Plant indigenous trees in open spaces, along river banks, and/or other disturbed areas</li> <li>Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>	Reduction in number and types of trees of biodiversity significance in sub-project areas where construction activities occur	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Planning and construction phases	50,000
All structural sub-projects	Impact on terrestrial fauna	<ul style="list-style-type: none"> <li>Identify wildlife habitats and avoid construction of flood control measures in or near the identified habitats</li> <li>Provide alternate passage for important wildlife habitats</li> </ul>	Rate of reduction in the number and type of wildlife around construction site	Every year	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Woreda agricultural office	Planning and construction phase	50,000



Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Design and construct wildlife access to avoid or minimize habitat fragmentation</li> </ul>					
All structural sub-projects	Impact on aquatic fauna	<ul style="list-style-type: none"> <li>Identify and avoid implementation of sub-projects in important aquatic habitats</li> <li>Consider providing structures that allow movement of aquatic fauna such as fish ladder</li> <li>Where practical, consider restoration of aquatic habitats upstream or downstream of the flood protection structures and replenish with the aquatic species available before sub-projects intervention</li> <li>Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>	Rate of reduction in the number and type of aquatic wildlife around construction site	Every year	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Woreda agricultural office	Planning and construction phase	50,000
All structural sub-projects	Impact on threatened fauna	<ul style="list-style-type: none"> <li>Assess and identify threatened terrestrial and aquatic fauna in sub-projects area of influence</li> <li>Construction of embankments, micro-dams, dikes, levees, retention</li> </ul>	Rate of reduction in type and number of threatened fauna	Every year	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda agricultural offices, Biodiversity	Planning and construction phases	30,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<p>ponds, and modification on river course should be avoided or minimized to the extent possible to protect habitats of threatened wildlife</p> <ul style="list-style-type: none"> <li>• Reduction and elimination of floodplains should be avoided to the extent possible to protect habitats of threatened aquatic fauna</li> <li>• As much as possible, restore and replenish important wildlife habitats, including aquatic habitats</li> <li>•</li> </ul>			institute		
All structural sub-projects	Impact due to Inefficient Energy Use and Management	<ul style="list-style-type: none"> <li>• Implement effective energy management system during construction work</li> <li>• Operate energy intensive machines and plants at the lowest level possible</li> <li>• Ensure efficient operation of machines and systems so that energy loss from leaks and other failures can be avoided</li> <li>• Periodically check and evaluate the efficiency of energy systems and where necessary replace problem components so that energy</li> </ul>	Amount of energy used and saved	Every month	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		loss due to ageing of components can be avoided <ul style="list-style-type: none"> <li>As much as possible, reduce the overall carbon footprint of the construction work</li> </ul>					
All structural sub-projects	Impact due to Inefficient Water Use and Management	<ul style="list-style-type: none"> <li>Implement effective water management system during construction work</li> <li>Implement water conservation measures</li> <li>Ensure the proper sealing of all storage structures to avoid water loss</li> <li>Avoid using the local communities' water sources</li> </ul>	Amount of water used / saved; source of water used	Every month	PMU of MoWE, PCU of EDRMC, Basin Offices, Regional / Woreda environmental protection authorities/offices	Construction phase	50,000
All structural sub-projects (particularly drainage works)	Impact on the river regime and aquatic habitat	<ul style="list-style-type: none"> <li>As much as possible, avoid modification of river courses or regimes identified as an aquatic habitat or breeding sites for aquatic species</li> <li>As much as possible, avoid modification of river regimes in areas where recession agriculture and grazing are practiced by the local communities.</li> <li>Allow sufficient opening or waterway to allow movement of aquatic species</li> </ul>	Lost aquatic habitats, rate of reduction of the aquatic species	Every 6 months	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda environmental protection authorities/offices, Woreda agricultural office	Construction and operation phases	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>• Allow controlled flood or release of water to replenish aquatic habitats</li> <li>• Compensate loss of aquatic species through re-introducing the lost aquatic species</li> <li>• Monitor for any unusual or invasive aquatic species and remove such species when seen</li> </ul>					
All structural sub-projects	Impact on groundwater resource	<ul style="list-style-type: none"> <li>• Avoid elimination of floodplains, particularly in areas (including downstream areas) where groundwater resource is limited or in use.</li> <li>• Carryout soil and water conservation programs at the upper catchment to compensate the reduction in groundwater recharge due to the reclamation of the flood plains</li> <li>• Release (if necessary, frequently) controlled downstream flow to enable groundwater recharge</li> <li>• Consider artificial recharge of selected aquifers in areas where flood control measures are implemented</li> </ul>	Measurement of groundwater level and yield in wet and dry seasons	Every 6 months	Basin offices, Regional water bureau, Woreda water office	Operation phase	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		to replenish the groundwater					
All structural sub-projects (particularly drainage works)	Impacts due to reduced or eliminated floodplains	<ul style="list-style-type: none"> <li>• Avoid completely drying up or eliminating floodplains so that the natural flood cycles could be maintained</li> <li>• Water drained out and released from floodplains should be temporarily stored in retention ponds and reused</li> <li>• Compensate loss of aquatic species through re-introducing the lost aquatic species</li> <li>• Restore alternative aquatic habitats for endangered species (if any)</li> </ul>	Area of floodplains, river discharge measurement at critical points along the river course	Every rainy season	Regional / Woreda water and environmental protection authorities/offices	Operation phase	40,000
All structural sub-projects (particularly drainage works)	Impacts due to river channel modifications	<ul style="list-style-type: none"> <li>• Planting grass on the river side and plug gullies by gabions to minimize soil erosion and sedimentation</li> <li>• Remove sediment from river beds before it is deposited in the hydraulic strictures</li> <li>• Construct watertight cutoff walls along the river side to minimize groundwater lowering as a result of deepening of the river bed</li> </ul>	Erosion and sedimentation rate	Every rainy season	Regional / Woreda water and environmental protection authorities/offices	Operation phase	30,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Consider artificial recharge of selected aquifers to replenish the groundwater</li> <li>Design and construct the flood protection structures considering their most minimal effects on existing livestock and crop production and other community livelihood sources.</li> <li>To avoid affecting the livelihood of the community, locate flood regulating structures where existing irrigation water intake exists.</li> </ul>					
All structural sub-projects (particularly drainage works)	Impacts due to paving of river channels	<ul style="list-style-type: none"> <li>Avoid paving of river channel on the river stretch of of ecological value, risk of flooding downstream, , geological features suitable for groundwater recharge, and aesthetic value</li> <li>Consider flood speed control measures downstream of the structures</li> <li>Consider artificial recharge of selected aquifers to replenish the groundwater</li> </ul>	Paved river channels, aggravated flooding and erosion	Every year	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water environmental protection authorities/offices	Planning, construction and operation phases	30,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
All structural sub-projects	Impact due to increased flood risks downstream	<ul style="list-style-type: none"> <li>Sub-project feasibility studies and ESIA's should include hydrological modeling and risk assessment for the catchment or sub-basin and provide designs that address downstream flooding risk.</li> <li>River modification and flood control structures should not be made on river stretches that will endanger communities, structures, parks and wildlife habitats</li> <li>Consider flood control structures that can avoid/reduce downstream flooding without significantly compromising the river flow regimes.</li> <li>Periodically inspect the structural integrity and soundness of the hydraulic structures</li> <li>Implement safety measures designed by qualified engineers</li> <li>Consider flood speed control or energy dissipation measures downstream of the structures</li> </ul>	Number and extent of flooding events, inspections of structures, early warning systems established, flood measurement stations available	Every year	PMU of MoWE, PCU of EDRMC, EMI, Basin offices, Regional / Woreda water and environmental protection authorities/office	Planning, construction and operation phases	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Flood risk warning systems should be established</li> <li>People in flood prone areas downstream should be regularly informed prior to the flood event and people should be advised to evacuate to a safer location</li> <li>Hydrological station network along the river course should be established to collect information on the river flow</li> <li>Forecast possible flood risks and communicate this information to people in the flood prone areas downstream to minimize risk</li> </ul>					
All structural sub-projects	Impact of the introduction of hydraulic structures on the river water quality and quantity	<ul style="list-style-type: none"> <li>Implement catchment protection and watershed management to reduce sediment load trapped by the hydraulic structures</li> <li>Deterioration in river water quality due river eutrophication can be minimized by controlling fertilizer input on farmlands upstream</li> </ul>	BOD and dissolved oxygen levels of the storages and river water, discharge of river water flow	During rainy season	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water and environmental protection authorities/offices	Planning, construction and operation phases	20,000



Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Planned hydraulic structures should allow controlled but constant flow downstream.</li> <li>Monitor quality of water upstream and downstream of the hydraulic structures</li> <li>If necessary, increase the frequency of release of water from the structures</li> </ul>					
All structural sub-projects	Cumulative impacts	<ul style="list-style-type: none"> <li>Take into account existing and future development projects within the basin when choosing sub-project sites that will minimize cumulative impacts</li> <li>Assess the cumulative impacts of implementing and operating sub-projects in combination with other current and future projects in the basins</li> <li>Integrate mitigation measures recommended through cumulative environmental assessments during sub-projects implementation</li> </ul>	Cumulative impacts identified and mitigated	As needed, depending on cumulative nature of impacts	PMU of MoWE, PCU of EDRMC, Basin offices, Regional / Woreda water and environmental protection offices	Planning, construction, and operation phases	Part of planning, construction, and operation budget
All structural sub-projects	Impact due to dismantled structures or materials after decommissioning	<ul style="list-style-type: none"> <li>Consider rehabilitating or upgrading the sub-projects to increase their service life</li> </ul>	Checking if the site is cleared from dismantled structures /	End of project life	Basin offices, Regional / Woreda environmental authorities/offices	Decommissioning phase	50,000

Sub-project or Activity Type	Environmental Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Annual Estimate Budget for Monitoring per Year per Sub-project (Birr)
		<ul style="list-style-type: none"> <li>Assess the environmental impacts of decommissioning sub-projects and recommend measure to adopt</li> <li>Properly dispose dismantled structures and materials at designates sites approved by the concerned local authorities</li> <li>Restore or rehabilitate the sub-project sites to its natural state after dismantling structures</li> <li></li> </ul>	materials				

**Table 10: Social Monitoring Plan**

(Note: This monitoring plan is an indicative plan and it shall be further developed/updated for specific sub-projects before project implementation.)

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
<b>Component 1: Strengthening Institutional and Coordination Capacity for DRM &amp; Component 4: Project Management and Implementation Support</b>							
Institutional Capacity	<ul style="list-style-type: none"> <li>Lack of institutional capacity at stakeholder organizations,;</li> </ul>	<ul style="list-style-type: none"> <li>Put in place, as a risk reduction measure, a separate ESS unit at federal level in MoWE and EDRMC.</li> </ul>	<ul style="list-style-type: none"> <li>Number of trainings and trainees</li> <li>ESS unit put in place</li> <li>Number of staff deployed</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	IDRMP-PMU	Throughout the implementation period	40,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
	<ul style="list-style-type: none"> <li>The absence of an ESS unit and ESS specialists;</li> <li>Capacity gap at <i>woreda</i>/grassroots levels in relation to safeguard issues;</li> <li>Inadequate transport logistics, office space, and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize the risk through deploying the relevant professional staff in the management of ES safeguard issues.</li> <li>Reduce the risk by delivering capacity enhancement trainings for the safeguard professionals.</li> <li>Reduce the risk by deploying the relevant professional staff to monitor the process of E&amp;S safeguard management</li> <li>Minimize the risk by raising the awareness of SC in respect to their responsibilities.</li> <li>Reduce the risk by strengthening the institutional capacity of PMU and PCU, particularly basin and sub-basin offices through the provision of transport logistics and office equipment.</li> <li>Reduce the risk by carrying out tailored and customized capacity building trainings for basin office/<i>woreda</i>/grassroots ESMF</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		implementing structures/committees					
Monitoring and Evaluation (M&E)	Inadequate attention given to the importance of M&E of safeguard management processes.	<ul style="list-style-type: none"> <li>Reduce the risk by introducing participatory monitoring and evaluation (PME) system;</li> <li>Minimize the risk by ensuring that social and environmental safeguards issues constitute the core of M&amp;E exercise</li> </ul>	PME system introduced and integrated.	Quarterly	IDRMP-PMU	Throughout the implementation period	20,000
Project Implementation support (GRM)	IDRMP's grievance redress mechanism stipulated in the ESMF may not uniformly be used during the implementation	<ul style="list-style-type: none"> <li>Reduce the risk by ensuring that IDRMP develop and uses its own in-built grievance redress mechanism;;</li> <li>Minimize the risk by enhancing the capacity of individuals who will be involved in GRM processes through appropriate trainings.</li> <li>Reduce the risk by strengthening the traditional dispute settlement institutions through trainings, particularly women and girls rights.</li> </ul>	<ul style="list-style-type: none"> <li>In-built GRM developed</li> <li>No of grassroots GRM functionaries trained</li> <li>No of traditional leaders trained</li> </ul>	<ul style="list-style-type: none"> <li>Once at end of first quarter</li> <li>Annually</li> </ul>	IDRMP-PMU	Throughout the implementation period	40,000
Project implementation support	The risk of staff turnover as a result of poor motivation (low	<ul style="list-style-type: none"> <li>Minimize the risk by introducing competitive salary</li> </ul>	Incentive schemes to retain to retain staff introduced	<ul style="list-style-type: none"> <li>Once at end of first quarter</li> </ul>	IDRMP-PMU	Throughout the	40,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
(Staff Turnover)	remuneration and inadequate incentive scheme)	scale and other benefit packages to recruit and retain competent technical staff. <ul style="list-style-type: none"> <li>Reduce the risk the fulfillment of better infrastructure bases, and support for the Project by the higher level IDRMP structures.</li> </ul>		<ul style="list-style-type: none"> <li>Annually</li> </ul>		implementation period	
<b>Potential Negative Impacts during the Construction Phase (Component 2)</b>							
All structural sub-projects	Loss of farm and grazing lands (land acquisition)	<ul style="list-style-type: none"> <li>Mitigate the risk through the restoration of productive lands affected by temporary activities.</li> <li>Minimize the anticipated risk by scheduling the construction during dry season when the land is not under cultivation;</li> <li>Minimize or reduce risks by providing adequate compensation for the property losses and damages;</li> <li>Minimize or reduce the risks by putting in place mechanisms to redress project-induced asset losses, restriction of access</li> </ul>	<ul style="list-style-type: none"> <li>Construction started at non-cultivation period</li> <li>Number of restored locations affected by temporary activities</li> <li>Redress/compensation mechanism put in place</li> </ul>	<ul style="list-style-type: none"> <li>At end of quarter</li> <li>Annually for the first two years</li> </ul>	IDRMP-PMU	Construction phase	40,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		and/or use to natural resources; <ul style="list-style-type: none"> <li>Mitigate the risk by making sure that the affected are compensated with a plot of land proportional to size lost as replacement;</li> <li>Minimize the risk by putting in place a Grievance Redress Mechanism to address the community complaints.</li> </ul>					
All structural sub-projects	Economic displacement induced by subproject implementation	<ul style="list-style-type: none"> <li>Mitigate the risk by adopting compensatory measures, and these include the settling of displaced farm and pastoral households and the provision of irrigated pasture for pastoral villagers;</li> <li>Mitigate the risk by creating of employment opportunities to strengthen the income of local communities</li> <li>Minimize the risk by making sure that the resettlements of the displaced is not between the flood</li> </ul>	<ul style="list-style-type: none"> <li>Compensation mechanism adopted</li> <li>Livelihood restoration measures taken</li> </ul>	<ul style="list-style-type: none"> <li>Annually for the first two years</li> <li>Annually</li> </ul>	IDRMP-PMU	Construction phase	10,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		control structure alignments; <ul style="list-style-type: none"> <li>Minimize the risk by putting in place a workable Grievance Redress Mechanism to address the community complaints.</li> </ul>					
All	Loss of pasture, livestock, crops and associated livelihoods	<ul style="list-style-type: none"> <li>Avoid the risk by designing and constructing the dyke structures considering their most minimal effects on existing livestock and crop production.</li> <li>Avoid the anticipated risk by designing and constructing water regulating structures where irrigation water intake and overtopping areas exists.</li> <li>Minimize the risk by putting in place a functional Grievance Redress Mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>Dyke structures and overtopping areas designed to minimize impact on community</li> </ul>	<ul style="list-style-type: none"> <li>Once at end of first quarter</li> <li>Biannually</li> </ul>	IDRMP-PMU	Construction and Operation phase	10,000
All		•	•	•			
All structural sub-projects	Restriction of access to movements	<ul style="list-style-type: none"> <li>Avoid the risk by consulting the communities where such assess restrictions exist and on how to harmonize structures with their demands and needs.</li> </ul>	Number of dyke crossing structures designed and constructed	Annually	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Construction phase	10,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Anticipate and avoid the risk by designing and constructing dyke crossing structures such as bridges enables maintaining the dyke quality, sustainability and attainment of community demands.</li> </ul>					
All structural sub-projects	Noise disturbance and increased vehicle traffic	<ul style="list-style-type: none"> <li>Minimize the risk of noise disturbance by ensuring that the equipment of subprojects operate only during day time.</li> <li>Avoid the risk by making sure that movement of all project vehicles and personnel will be restricted to within work areas.</li> <li>Minimize the risk by providing construction workers with safety device for protection of ears (earmuffs and ear-plugs etc.)</li> <li>Avoid vehicle traffic through the communities as far as possible and project routes should be authorized by the Safeguard specialists.</li> <li>Minimize the risk by keeping vehicle speeds</li> </ul>	<ul style="list-style-type: none"> <li>Movement restrictions put place</li> <li>Number of workers provided with safely devices</li> <li>Number of community consultation held</li> <li>GRM put in place</li> </ul>	Quarterly	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Construction phase	20,000



Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>low, and horns will not be used while passing through the communities.</p> <ul style="list-style-type: none"> <li>• Avoid nighttime traffic near the communities.</li> <li>• Minimize the risk by limiting working hours for construction activities within/near the communities to between 8 am and 6 pm.</li> <li>• Minimize the risk through maintaining liaising with the community.</li> <li>• Minimize the risk by putting in place an effective Grievance Redress Mechanism to address the community complaints</li> </ul>					
All structural sub-projects	Damage to cultural heritage and historic and ritual sites during excavation and construction operations	<ul style="list-style-type: none"> <li>• Avoid the risk by first conducting public consultations and engaging cultural or religious leaders and local authorities.</li> <li>• Avoid the risk by first identifying areas of cultural, historic and or religious significance.</li> </ul>	<ul style="list-style-type: none"> <li>• No of public consultations held</li> <li>• Dykes or other flood reduction structure routes designed appropriately</li> <li>• Heritage handling procedure put in place</li> </ul>	<ul style="list-style-type: none"> <li>• At end of first quarter</li> <li>• Annually</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Construction phase	20,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Avoid the risk by involving the local community in locating appropriate project sites and access routes that avoid such resources.</li> <li>• Mitigate the risk, if disturbance is unavoidable, by reaching agreements on mitigating measures with stakeholders, particularly project affected communities.</li> <li>• If excavation encounters archaeological artifacts, halt construction and notify relevant authorities, and mitigate properly.</li> <li>• Avoid the risk by designing and constructing the dyke or other flood reduction structure routes in harmony with the cultural, religious and historical heritage sites along the river course.</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Minimize the risk by including or adding a clause for chance find procedures in construction contract agreements.</li> <li>Reduce the risk by notifying an institution responsible for culture, religious and historic heritage sites protection and conservation, etc.</li> <li>Minimize the risk by putting in place a workable Grievance Redress Mechanism to address community complaints.</li> </ul>					
All structural sub-projects	Infectious and communicable diseases impacts	<ul style="list-style-type: none"> <li>Minimize the risk by ensuring that the provision of HIV and AIDS education and information shall form part of the delivery and health care services.</li> <li>Reduce the risk by working closely with respective government departments, local NGOs, and/or faith-based organizations in</li> </ul>	<ul style="list-style-type: none"> <li>No of health education trainings provided</li> <li>COVID-19 prevention systems put in place</li> <li>No of workers who fully comply with PPE use standards</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Construction phase	20,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>HIV and reproductive health;</p> <ul style="list-style-type: none"> <li>• Reduce the risk by constantly making available VCT services to the workers and community members;</li> <li>• Reduce the risk by ensuring that all subproject sites/workplaces make COVID-19 information from relevant health agencies readily available to their workforce;</li> <li>• Minimize the risk by promoting continuous sensitization of the workers and community members about HIV/AIDS and other STDs.</li> </ul>					
All structural sub-projects	Improper campsite impacts	<ul style="list-style-type: none"> <li>• Avoid the risk by locating construction camps at socially and environmentally safe sites;</li> <li>• Avoid the risk by consulting and</li> </ul>	<ul style="list-style-type: none"> <li>• Camps located at appropriate location</li> <li>• No of SEA/SH prevention trainings provided</li> <li>• No of surveillance missions carried out</li> </ul>	<ul style="list-style-type: none"> <li>• Once at end of first quarter</li> <li>• Biannually</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Construction phase	30,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>liaise with the appropriated local leaders and community representatives and residents regarding the location of excavation sites;</p> <ul style="list-style-type: none"> <li>• Locate workers camp away from communities' settlements in order to avoid social conflicts,;</li> <li>• Minimize the risk by informing local authorities responsible for health, religious and security;</li> <li>• Minimize the risk by promoting massive awareness campaigns on GBV- SEA/SH and early child marriages practices to construction workers, parents, teachers, pupils and students and local leaders.</li> </ul>					
All structure	Damages the existing infrastructure and institutions	<ul style="list-style-type: none"> <li>• Reduce the risk by designing and constructing dyke</li> </ul>	<ul style="list-style-type: none"> <li>• Dyke alignments designed and constructed to</li> </ul>	<ul style="list-style-type: none"> <li>• Once at end of first quarter</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Construction and Operation phase	5,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>alignments by minimizing possible damages on existing infrastructures and institutions;</p> <ul style="list-style-type: none"> <li>Minimize the risk by locating structures and underground installations in consultation and cooperation with relevant large-scale development projects and economic establishments in the areas.</li> <li>Change dyke route or design, as risk reduction measure, in such a way that they avoid possible damages on different institutions and infrastructures. <ul style="list-style-type: none"> <li>Cooperate with public services providers in the area to avoid service delivery disruptions, and timely notify service provision temporary interruptions.</li> </ul> </li> </ul>	<p>minimize damage to infrastructure</p> <ul style="list-style-type: none"> <li>Number of consultations held with infrastructure stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Biannually</li> <li></li> </ul>			
All structural sub-projects	The risk of GBV-Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH)	<ul style="list-style-type: none"> <li>Minimize the risk by assigning a gender</li> </ul>	<ul style="list-style-type: none"> <li>Gender experts assigned</li> <li>GM strategy adopted</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP PMU</li> </ul>	Construction phase	30,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>expert at the PMU/PCU and paid focal person at the basin and sub-basin office levels;</p> <ul style="list-style-type: none"> <li>• Apply GM strategy, by way of reducing the risk, in all the project cycle through application of gender analysis;</li> <li>• Reduce the risk by promoting mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women;</li> </ul>	<ul style="list-style-type: none"> <li>• Code of conducted prepared</li> <li>• Code of conducted disclosed</li> <li>• No of training sessions conducted</li> <li>• Cases if GBV reported and investigated</li> <li>• GRM put in place</li> <li>• Gender segregated living space and facilities available</li> <li>• M&amp;E system put in place</li> </ul>				

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence;</li> <li>• Introducing a Worker Code of Conduct as a risk reduction measure as part of the employment contract; [</li> <li>• Ensure these codes of conduct are publicly disclosed in local languages and are widely accessible to all workers;</li> <li>• As a risk reduction measure, ensure contractors adopt a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence;</li> <li>• Involving relevant authorities such as law</li> </ul>					



Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>enforcement, community leaders in handling sexual abuse in project communities and ensure that where relevant, referral pathways for eventual cases are identified;</p> <ul style="list-style-type: none"> <li>• Reduce the risk by way of delivery of periodic mandatory training on GBV to all workers, including contractors, subcontractors;</li> <li>• Training grievance redress committee to handle issues of sexual abuses perpetrated by project workers;</li> <li>• Develop safe, confidential and accessible grievance reporting, referral and support systems for workers and local communities as a way to reduce the risk;</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Minimize the risk by providing safe, secure and separate living spaces for male and female construction workers;</li> <li>Provide lighting around project sites, including around latrines and access routes.</li> <li>Install separate, lockable latrines for female construction workers;</li> <li>As a risk reduction measure, develop M&amp;E system with clear indicators to follow up progress made and challenges encountered.</li> <li></li> </ul>					
All structural sub-projects	The risk of child labor	<ul style="list-style-type: none"> <li>By way risk reduction, provide trainings to ensure contractors are informed of legal consequences of child labor;</li> <li>Ensure that contractors</li> </ul>	<ul style="list-style-type: none"> <li>Number of training sessions held</li> <li>Number of age verified workers</li> <li>LMP prepared and implemented</li> <li>No of M&amp;E missions conducted</li> <li>GRM established</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Construction phase	15,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>document and verify age of all prospective workers prevent employment or engagement of child labor as risk reduction measure;</p> <ul style="list-style-type: none"> <li>• Prepare a separate LMP which contains risk reduction measures, including terms and condition of employment and minimum age;</li> <li>• Periodic monitoring to ensure that terms and conditions of all project's workers are in accordance with the requirements of national law and ESS2 as indicated in the LMP;</li> <li>• Reduce the risk by establishing a GRM through which workers will be able to lodge their complaints,</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		concerns, difficulties.					
All structural sub-projects	Labor influx and associated risks	<ul style="list-style-type: none"> <li>• Reduce labor influx by tapping into the local workforce. The most effective mitigation measure against labor influx is to avoid or reduce it;</li> <li>• Where it is feasible, train local workers to meet project requirements;</li> <li>• As a risk reduction measure, develop an induction program including a code of conduct for all workers;</li> <li>• As an integral part of the risk reduction measures, provide cultural sensitization training to improve awareness of workers to local cultures, traditions and lifestyles;</li> <li>• The provision of HIV and AIDS education and</li> </ul>	<ul style="list-style-type: none"> <li>• Proportion of local workers trained and employed</li> <li>• Induction program put in place</li> <li>• No of community consultations held</li> <li>• Plans to meet influx put in place</li> <li>• Number of dialogue with local leaders and community members</li> <li>• Number of health education trainings provided</li> </ul>	<ul style="list-style-type: none"> <li>• Biannually</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Construction phase	20,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>information as a means to reduce risk for all the migrant construction worker, including the local workforce;</p> <ul style="list-style-type: none"> <li>• Voluntary Counseling and Testing services to the workers and community members;</li> <li>• Plan for population increase and consequent demand on public utilities;</li> <li>• Dialogue between the local leadership, farmers/pastoralists and immigrants;</li> <li>• Build the capacity and work closely with local law enforcement.</li> </ul>					
All structural sub-projects	Occupational health and safety hazards/risks	<ul style="list-style-type: none"> <li>• Minimize the risk by ensuring the presence and continued use of normal control measures, including personal protective equipment (PPE).</li> </ul>	<ul style="list-style-type: none"> <li>• No of OHS trainings and no of workers trained</li> <li>• Safety monitoring systems put in place</li> <li>• No of workers who fully comply with PPE use standards</li> </ul>	<ul style="list-style-type: none"> <li>• Quarterly</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Construction phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Minimize the risk by providing compulsory HIV/AIDS and STDs, and COVID-19 awareness creation and prevention training.</li> <li>Minimize the risk by providing and have all workers wear face coverings (i.e., cloth face coverings or masks).</li> <li>Minimized the risk by training workers on COVID-19 policies and procedures in a language they understand.</li> <li>Reduce the risk by ensuring that tender documents include standard best practice clauses.</li> <li>Reduce by the risk by employing the local people for labor works.</li> </ul>	<ul style="list-style-type: none"> <li>No of health awareness trainings organized</li> </ul>				
<b>Potential Negative Impacts during the Operation Phase</b>							
All structural sub-projects	Aggravates downstream flood problems	<ul style="list-style-type: none"> <li>Reduce downstream flooding risk through periodic monitoring, surveillance, and inspections of flood control structures</li> <li>Reduce consequences through preparing</li> </ul>	<ul style="list-style-type: none"> <li>Number of monitoring missions conducted</li> <li>Early warning systems put in place</li> </ul>	<ul style="list-style-type: none"> <li>Biannually</li> <li>Annually</li> <li>Annually</li> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>BDA Basin offices</li> </ul>	Operation phase	50,00

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>nonstructural measures such as early warning systems, emergency preparedness plans, emergency response capacity building</p> <ul style="list-style-type: none"> <li>Minimize anticipated risks through enhanced hydromet monitoring/gauging.</li> <li>Mitigate the risks through establishing effective communication channels among local administrations to enable flood early warning.</li> </ul>	<ul style="list-style-type: none"> <li>Hydromet monitoring put in place</li> <li>Communication channels put in place</li> </ul>				
All structural sub-projects	Restrictions of traditional water uses outside flood protection structures	<ul style="list-style-type: none"> <li>Anticipate and avoid the risk by consulting project affected communities where to construct the structure;</li> <li>Avoid the risk by designing and constructing water intake points with regulating structures that will enable the river water reach them.</li> </ul>	<ul style="list-style-type: none"> <li>Number of community consultation conducted</li> <li>Water intake points and regulating structures designed and constructed</li> </ul>	<ul style="list-style-type: none"> <li>Once at end of first quarter</li> <li>Biannually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Operation phase	50,000
All structural sub-projects	Adverse impacts on subsistence fishing	<ul style="list-style-type: none"> <li>To minimize the risk, water drained out and released from flood plain should be temporarily stored in retention ponds;</li> </ul>	<ul style="list-style-type: none"> <li>Retention ponds for storage of waters released</li> <li>Community consultations conducted</li> <li>GRM established</li> </ul>	<ul style="list-style-type: none"> <li>At the start of construction</li> <li>quarterly</li> </ul>	IDRMP-PMU Basin offices	Construction and Operation phase	30,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>Reduce the risk by designing and constructing the embankment structures considering their most minimal effects on existing fisheries by changing embankment routes;</li> <li>As a risk reduction measure, involve the local communities in the decision making process of the design and construction of the embankments;</li> <li>Reduce the risks by establishing a workable Grievance Redress Mechanism should be put in place to address the community complaints.</li> </ul>					
All structural sub-projects	Impacts on public health (waterborne, communicable and vector-borne diseases)	<ul style="list-style-type: none"> <li>Minimize the risk by ensuring that these subprojects are accompanied by education for improved sanitation and hygiene;</li> <li>Minimize the risk by maintaining drainage lines subprojects properly to</li> </ul>	<ul style="list-style-type: none"> <li>No. of education session held</li> <li>Drainage lines subprojects for removing runoff waters constructed</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly</li> <li>Annually for the first two years</li> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> <li>Woreda health bureaus</li> <li>Kebele health extension worker</li> </ul>	Construction and Operation phase	5,000



Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		have the capacity of removing runoff waters from the residential areas before it stagnates.					
All structural sub-projects	The risk of exclusion/discrimination of underserved and other vulnerable groups	<ul style="list-style-type: none"> <li>Minimize the risk by making use of and follow up the strict observation of the government policy on gender and other forms of social inclusion;</li> <li>Reduce the risk through conducting periodic and specific field identification of key issues of exclusion, discrimination and marginalization of women and other vulnerable groups;</li> <li>Assess, as a risk reduction measure, the constraints and opportunities in the Project for encouraging involvement of these groups;</li> <li>Assess the organizational capacities of the implementing organizations, and develop Action Plan;</li> </ul>	<ul style="list-style-type: none"> <li>Government policy on gender and inclusion followed</li> <li>No of mission conducted</li> <li>Cooperation with community structures established</li> <li>No of community consultations</li> </ul>	<ul style="list-style-type: none"> <li>Biannually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Operation phase	10,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• Adopt the risk minimization measure of utilizing community structures and local administration to mobilize minority groups to participate in meetings and consultations,</li> <li>• Provide as risk reduction measure local language interpreters to ensure understanding and ability to give feedback during engagement.</li> <li>• Target women and youth in project consultations and activities for their meaningful inclusion in project decisions.</li> <li>• Minimize the risk by ensuring involvement of women in the design of flood preparedness and mitigation activities;</li> <li>• Designing and implementing early warning systems as a risk minimizing measure to increase outreach to socially excluded groups;</li> <li>• Building the capacity of women (or women-led organizations) to</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>better understand and use early warning information;</p> <ul style="list-style-type: none"> <li>• Reduce the risk by mainstreaming gender-sensitive approaches in various DRM policy.</li> </ul>					
All structural sub-projects	The risk of social tension and conflict	<ul style="list-style-type: none"> <li>• Reduce the risk by developing a conflict-sensitive analysis;</li> <li>• Minimize the risk by consulting project affected communities where to construct the structure;</li> <li>• Reduce the risk through carrying out assessment study on water demand and availability.</li> <li>• To reduce the risk, the flood control dyke construction should be from downstream to upstream;</li> <li>• The water of the river should be controlled by water regulating structure that can be opened and closed as necessary;</li> <li>• The building of small bridges should be considered as part of the dyke design and construction to ease movement of humans and livestock;</li> </ul>	<ul style="list-style-type: none"> <li>• Conflict analysis conducted</li> <li>• No of community consultations held</li> <li>• No of affected community members compensated as per RPF</li> <li>• GRM put in place</li> <li>• Customary/informal dispute/conflict mediation institutions used</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> </ul>	<ul style="list-style-type: none"> <li>• IDRMP-PMU</li> </ul>	Operation phase	20,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<ul style="list-style-type: none"> <li>• The construction of the flood control dyke should incorporate into its design a regulating structure allowing communities to grow horticultural crops and graze their animals;</li> <li>• The affected have to be compensated as a risk mitigation action with a plot of land proportional to size lost as replacement;</li> <li>• Compensatory risk mitigation measures need to include the settling of displaced farm and pastoral household;</li> <li>• Make good use of the existing customary/informal dispute/conflict mediation institutions to address the social conflicts;</li> <li>• Community consultations and consensus with upstream and downstream community.</li> <li>• Reduce the risk by putting in place a Grievance Redress Mechanism to address</li> </ul>					

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		the community complaints.					
All structural sub-projects	The risk of operational concerns due to remoteness and insecurity	<ul style="list-style-type: none"> <li>Minimize the risk by continuously monitoring the situation in project areas to enable early detection of conflict;</li> <li>Adopt, as a risk reduction measure, the remote management approaches to subproject implementation, monitoring and supervision;</li> <li>Reduce the risk by conducting capacity building for local staff and partners (basin and sub-basin level ESMF implementation structures/committees and IDRMP Basin Development Office Steering Committee members).</li> </ul>	<ul style="list-style-type: none"> <li>Security monitoring system put in place</li> <li>Contingency remote management system put in place</li> <li>Capacity building conducted</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>IDRMP-PMU</li> </ul>	Operation phase	10,000
All structural sub-projects	The risk of elite capture	<ul style="list-style-type: none"> <li>Reduce the risk by ensuring that community members are aware of subproject operation's purposes and know committee members and their roles;</li> <li>Minimize the risk by monitoring and following up Project</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring implementers work on information disclosure related to budget, financing and procurement</li> <li>Involvement of PAP in the election of leadership</li> <li>Participatory M&amp;E put in place</li> </ul>	Biannually	IDRMP-PMU	Operation phase	10,000

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>implementers work on information disclosure especially related to project budgets, financing, contracting, and procurement;</p> <ul style="list-style-type: none"> <li>• Reduce the risk by making certain that community members are involved in all stages of the project cycle;</li> <li>• Ensure, as a risk reduction action, that the selection of the leadership at the grassroots level are carried out in a democratic and transparent manner;</li> <li>• Put in place a participatory Monitoring &amp; Evaluation;</li> <li>• Reduce the risk by developing complaint handling mechanisms;</li> </ul>	<ul style="list-style-type: none"> <li>• GRM established</li> </ul>				
	Occupational health and safety hazards/risks	<ul style="list-style-type: none"> <li>• Minimize the risk by ensuring the presence and continued use of normal control measures, including personal protective equipment (PPE).</li> <li>• Minimize the risk by providing compulsory HIV/AIDS and STDs, and COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>• No of OHS trainings and no of workers trained</li> <li>• Safety monitoring systems put in place</li> <li>• No of workers who fully comply with PPE use standards</li> <li>• No of health awareness trainings organized</li> </ul>	Quarterly	IDRMP-PMU	operation phase	Part of sub-project implementation budget

Sub-project or Activity Type	Social Risks/Impacts	Proposed Mitigation Measures	Monitoring Parameters / Indicators	Frequency of Monitoring	Institution Responsible for Monitoring	Implementation Timeframe	Implementation Budget
		<p>awareness creation and prevention training.</p> <ul style="list-style-type: none"> <li>Minimize the risk by providing and have all workers wear face coverings (i.e., cloth face coverings or masks).</li> <li>Minimized the risk by training workers on COVID-19 policies and procedures in a language they understand.</li> <li>Reduce the risk by ensuring that tender documents include standard best practice clauses.</li> <li>Reduce by the risk by employing the local people for labor works.</li> </ul>					

	1.		•	•	
			•	•	

			•		
	1.	•		•	
		•		•	
				•	
	1.	•	•		
	2.	•	•		•
	1.	•		•	•
				•	•
	1.	•		•	•
	1.	•		•	•
	1.	•	•	•	
	1.		•	•	
	1.	•	•	•	
	1.	•	•	•	
	1.	•	•	•	
	1.	•	•	•	
	1.	•	•	•	
	1.	•	•	•	
	1.		•	•	
	1.	•	•	•	

Overall cost estimate for the environmental and social monitoring for one year per sub project is **1,280,000 Birr**



## 8 Public and Stakeholder Consultations and Disclosure

### 8.1 Background and Rationale for Consultations

It has been well established that inadequate potential beneficiary participation and community ownership, including inadequate engagement in the process, greatly diminishes the long-term sustainability of project initiatives.

Consultation with the relevant stakeholders and the target communities is considered an important part of developing the ESMF as it provides valuable input to develop acceptable and sustainable project design and implementation plans. Most importantly, it allows the community of Project Affected People (PAP) opportunities to voice their aspirations, concerns and preferences regarding the intended development project. Consultations provided the opportunity to enhance community understanding and appreciation of the significance of the subproject physical investment infrastructures and the social and economic benefits/risks they entail, build the trust of target beneficiaries, and secure their acceptance and support for its smooth implementation.

Accordingly, in order to ensure that project beneficiary communities in the target basins air their views and concerns in relation to IDRMP subprojects, community consultation was held at a selected flood risk and flood affected community in the Becho Plains of the Upper Awash Valley. In addition, consultations and discussions were held with relevant personnel at federal level in MoWE and BDA.

### 8.2 Issues Discussed during Consultations at community level

As mentioned above, one of the key objectives of the community consultations conducted during the preparation of this ESMF was to allow beneficiary groups to prioritize their felt needs and concerns, and express their views on anticipated risks and benefits, thereby strengthening their interest and commitment to fully participate at all phases of the project management.

The consultation was conducted with a community from Awash Bello *Kebele*, Sebetta Hawas *Woreda* of Finfine Special Zone of Oromia in the Becho Plains of the Upper Awash Valley. The participants of community consultations were 11 in number (male 9 female 2), and comprised smallholder farmers, women, youths, and elders, as well as experts at *woreda* administration office (Minutes of community consultation and list of community consultation participants are attached in Annex 17 and 18 respectively). The plan was to have the consultation in this *woreda* with at least twenty community members representing both sexes, and accordingly prior appointments and calls were made for them to convene for consultation meeting. On the day of the meeting, however, only twelve managed to show up for the purpose, and the session proceeded with the number of participants present regardless. Similar consultation is scheduled at later stage of the

preparation of this ESMF to be held with community members in Bora and/or Liben *woredas* of the Upper Awash Valley area. The plan to hold a third consultation with community members from a pastoral *woreda* in the Middle or Lower Awash Valley has been cancelled owing to the deteriorating security situation in the areas resulting mainly from the intense inter-ethnic conflicts which made our travel to the said communities difficult.

Before the commencement of the consultations, participants were given brief introductions, indicating who is conducting the meetings, why the participants were invited and what will be discussed, and assurance to feel free to voice their opinions or raise issues of concern. Minutes of the discussions were recorded and signed by participants, and additional notes taken by the consultants.

There were a range of issues discussed during community consultations which are summarized here. The main topics covered in the consultations were:

- *Selection of subproject flood protection schemes*: when by whom, whether consulted, types and level of community consultations involved, who benefits and who does not;
- *Communities' perceptions*: the benefits and risks of the proposed flood control/reduction schemes and what they might involve;
- *Flood control/reduction scheme management*: perceived roles of the communities and support required;
- *Physical/economic displacement*: awareness about likely consequences, people to be affected, consent on relocation and compensation terms, cultural and/or historical heritage sites and social service facilities that may be affected etc.; and,
- *Resettlement and compensation plans*: under what circumstances, who will be affected, how, whether fair/reasonable, at what stage it will be done?

Community consultations with farmers focused mainly on the envisaged basin-level flood risk management investments. Farmers at the flood risk zone in the Becho Plains have identified during the consultation meeting the reason for the failure to resolve the flood risks in their locality as follows:

- Since the farmers in the upper catchment are less affected by the flood risks, they are not willing to participate in the soil and water conservation programs planned to be undertaken in the upper catchment. This is due to the lack of proper planning and awareness on the part of the communities living in the upper catchment;
- Lack of ownership of the flood control infrastructures to regularly maintain the infrastructures;
- Inadequate consultation with the community. There is a widely held perception that consultation is a onetime event.

- The absence of integration or integrated planning effort to manage the flood risks at the upper, middle and lower parts of the river catchment. The farmers believe that flood control measure should start from downstream and should progress upstream on a planned matter.
- Lack of commitment on the part of the relevant government offices to allocate adequate funds and their reluctance to release budget on time to manage the flood risks;
- Reluctance on the part of the government to resolve the flood risks prior to the onset of floods and flood destruction. The Government is not proactive but reactive to manage flood risks.
- Dredging the sediment from the river bed is normally done during rainy season. It is difficult to effectively remove the sediment from the river during this season.
- Increase in the flood risk occurrence from time to time due to climate change. The flood used to occur every 8 or 10 years but since recently it is happening every year.
- The quality flood control physical and non-physical infrastructures that are implemented in this zone is very poor. This is due to lack of proper supervision on the part of the implementers.

The farmers expressed their resentments and frustration as a result of such failure for the following reasons.

- The soil fertility of their farmland is deteriorating due to the flood inundation, and the prevalence of disease increases as a result of the flood transporting and dumping wastes from the upstream catchment on their locality.
- Similarly, crop infestation has increased from time to time and crop yield is decreasing.
- Due to the flood inundation of their farmland, they could not grow fruits and vegetable, and food crops such as *teff*, besides their inability to raise livestock due to lack of animal feed.
- Farmers living in the flood inundated area flee to other villages during the flood season and return to their village after the flood receded but have no food to feed their family upon return.

### **Summary of Consultation at Bora and Liben Chiquala, East Shoa Zone of Oromia Region, Ethiopia**

A total of 89 community members including farmers, workers, young people, women and community leaders attended the consultation conducted with residents of the two kebeles.

The residents explained their vulnerability to flood and the adverse impacts it continued to have on their communities in the form of loss of lives, farmland, structures and property since the 1970s. During those time, the main cause of flooding was the overflow of the river to the surrounding plain areas. In recent decades however, the river Awash often breaks out of its natural course and floods much wider area than it used to making the flooding pattern unpredictable.

As agricultural crops and horticulture are destroyed, the communities in the two Kebeles. And

despite the availability of land for cultivation, they have become increasingly dependent on buying food from the market. However, with the rising cost of living, many are forced to rely on food aid from government.

PAPs explained the multiple loss they suffer. Flooding causes damage to farms, structures, furniture and household items. PAPs are expected to pay taxes for land even though they are unable to cultivate it due to flooding. They mentioned that while they have adequate cultivable land in the kebeles, the flooding stopped them from producing their own food and rely instead on buying from the market. The rise in cost of food means that they do not have enough to provide for their families.

The vulnerable groups in the area include women, elderly and persons with disability as well as farm workers. The mobility constraints by women and other vulnerable groups means they are unable to move to safe places and stay with families during flooding. The women explained that they take the animals and their children to higher grounds and leave them there without sufficient food and fodder until the flood recedes. They also mentioned that sudden flooding destroys farms and vital assets of the poor such as livestock, furniture and other household materials. The recovery from impact of flooding is slow for vulnerable households.

In the past few years, government has started constructing dikes and other flood protection structures to reduce risks of flooding. However, due to poor planning, the flood protection structures are left incomplete. Poor timing of construction activities, inadequate allocation of budget for construction and maintenance and poor quality of construction are main causes for continued flood vulnerability of communities. The PAPs mentioned that the poor quality of constructions created a false sense of safety among the community and the poor construction has made flooding patterns increasingly unpredictable causing sever damages to farms and structures. Communities in the two kebeles are aware that the flood protection structures and dikes will require land and that communal and individual land will be impacted. The women and the community members consulted are hopeful that the construction of dikes and other structures will enable them to produce three or four times a year in the remaining land and compensate for the loss. Due to availability of land, the average land holding is higher (ranging from minimum 1.25 ha to 4ha) and the impact on land for sub project activities is expected to be limited. The PAPs suggested that where impact is significant communal land should be allocated to compensate for land loss.

The consultation with PAPs on the proposed project activities highlighted some of the adverse impacts on livelihood of youth groups employed in sand extraction from the Awash River, access to water for irrigation and animal watering, loss of fertile land for farming due to loss of silt accumulation caused by flooding, the loss of communal land for grazing land and pressure on services due to labor migration from surrounding areas.

The project may adversely impact on sand extraction activities in the riverbanks by young people in the two kebeles. There is an ongoing consultation with the youth groups to mitigate the potential impact by allocating communal land that is not being used due to flooding.

The protection of flood while enabling to expand cultivable land and harvesting three to four times a year. Flood protection activity could result in reduction of productivity of land over the years as the accumulation of silt after flooding reduces the fertility of the soil. However, through increasing use of compost and fertilizer it can be mitigating this impact and improve soil fertility.

Access to water for irrigation and animal watering may be affected by the construction of dikes and structures. Although this could be a problem, the participants suggested that rump like a structure be built to allow for animal watering. Similarly, participants suggested that water pumps and hand dug wells can be used for irrigation.

Project affected persons mentioned that the construction of dikes could impact some of the communal land that is used by neighboring communities as grazing land. The PAPs mentioned that consultation were conducted in the past with these communities and alternative grazing land are being identified.

The expected increase in agricultural production in the area and increased investment is expected to attract labor from surrounding areas. The PAPs also mentioned due to flooding the social services such as schools and health posts are located far from the communities. (eg. the nearest school is 5kms away from Bora kebele). The PAPs mentioned that the project will improve their access to social services as the government will be able to build the health posts and schools. The communities will be able to effectively use their communal land for such and other purposes.

The project affected persons mentioned that important cultural practices conducted under trees and the river side (e.g Erecha) can be impacted by the construction of dikes and other structures. The PAPs, based on previous experiences suggested that areas dedicated for cultural practices should be preserved and provisions should be made during construction to ensure access to the water for conducting Erecha and other cultural practices.

### ***8.2.1 Perceived Impacts of the Project***

The community consultation participants have a good deal of information about importance of dyke and other forms of flood control construction activities as the Basin Development Authority has been implementing similar projects for a long time in the Upper Awash Basin, and the government has been involving in their areas to deal with flood disaster events. Accordingly, flood protection and environmental experts periodically come and visit their areas to make consultations with community members and representatives and *woreda* officials, and this has given them the opportunity to have a better knowledge and understanding about project objectives. Owing to this, they were able to adequately express their views on the project benefits, threats and mitigation measures as indicated below.

In general, according to the participants of the consultation meetings and discussions, the positive impacts of the project undoubtedly outweigh the negative impacts, and that they are very much enthusiastic in expressing their consent to the envisaged project schemes. Given that flooding is a serious problem affecting all aspects of their life, the participants hold a positive attitudes towards

these kinds of intervention, and expressed their willingness to actively participate in project implementation. The list of community consultation participants and their signatures are annexed.

During the consultations, communities were asked to indicate what they felt would be the positive and negative impacts resulting from the flood control/reduction infrastructure schemes.

### ***Positive Impacts***

The communities indicated the positive impacts of the flood control/reduction infrastructure investments as being:

- Ability to produce 3 times a year (better income, food security, etc.);
- Better health (improved nutrition, capable of paying for health services etc.);
- Improved life standard (better housing, education, etc.);
- Creation of employment opportunity;
- Ability to produce high value crops such as marketable horticultural crops;
- Opportunities for livelihood diversification (increased investment and purchasing capacity attracts service renders, artisans and traders);
- Better livestock production due to the availability of animal feed.

### ***Perceived Negative Impacts***

Negative impacts of the flood protection schemes were mentioned as follows:

- Community health and safety (e.g. malaria, HIV/AIDS, other risks)
- Children and livestock falling into reservoirs (communities where earth dams are proposed)
- Pesticides used on farms kill bees (loss/reduced apiculture production and affecting pollination)
- Reflection from water surface in earth dams could trouble surrounding inhabitants.
- Unless well planned, irrigation schemes might be a potential source of dispute/conflict between upstream and downstream users.
- Inability to provide reasonable treatment of project affected people resulting from loss of land/assets from schemes involving earth dams because of the limited land available to replace holdings (although some community members expressed their willingness to share holdings);

## ***8.2.2 Other Issues and Concerns (Asset Loss and Loss of Access to Assets Involuntary Resettlement)***

It is to be expected that there may be instances where individuals, households or communities will be affected by the loss of land assets for the implementation of IDRMP sub-projects. In such situations, according to community consultation participants, the consent of the affected will first be secured in the presence of community representatives, before the implementation of sub-projects is embarked on. In addition, the affected have to be compensated with a plot of land

proportional to size lost as replacement from community land, if available, or be paid a duly assessed compensation.

In the worst-case scenarios, measures will be taken to convince affected parties that compensations are not to be expected since the flood control/reduction infrastructure built are in the collective interest of the community and worth the losses caused. Locals are also aware that land is scarce in these areas and there is hardly any communal land available that can be given as replacement for such losses. It is also expected that often, the losses are not significant, and when they occur they are handled at *kebele* level in the presence of community elders and traditional leaders, and hence not raised as major issues for dispute when compared to the magnitude the flood problem and the positive potential benefits of the schemes.

### **8.3 Brief summary of the Previous Stakeholders' Engagement Activities**

One of the flood prone areas is in Afar lying along the middle and lower plains of River Awash. Flooding in the Awash River Basin has significant socio-economic impact on human lives and properties. Immediate impact of flooding includes loss of human life, damage to property, destruction of crops, loss of livestock and damage on infrastructure.

To tackle the flooding challenges, Awash Basin Authority carried out feasibility study. As part of the feasibility study public consultation was conducted with representatives of the community drawn from all sectors of the project area community such as religious leaders, female, unemployed sector of the society. The entire participant on the discussion reflected their feeling without restraint about the project. Most of them have positive attitude towards the implementation of the project. The outcome of the consultation and discussion held at community and woreda level confirmed that they do have good attitude and support to the proposed project. They believed that the implementation of the dykes would assist the overall economic development of the people living in the middle and lower Awash Basin.

In this particular project the client created awareness about the project by disclosing information to the stakeholders about the project at the early phase i.e. at feasibility study phase of the project. The effort made by the client to disclose information to the stakeholders about the project at this early phase is exemplary to the other projects planned to be implemented in the other basins.

### **8.4 Summary of Outcomes of Stakeholders Consultations at Federal level**

At federal level, based on their relevance to the project and the proposed subproject investments, discussions were held with representatives/key personnel of the relevant stakeholders involved in project implementation, notably, MoWE and BDA. These personnel are two males (the Deputy Director General and the River Training Team leader) from MoWE; and another three male experts (the Social Safeguard Specialist, the Environmental Safeguard Specialist, and the Flood Protection

Expert) from BDA.

Issues raised during federal level discussions included:

- *Relevance of the initiative*: alignment of the proposed project with current developmental priorities in general and the selected basins in particular;
- *Grievance redress*: legal provisions, what and how, mechanisms and procedures/processes;
- *Public disclosure of ESIA*s: Requirements and experience/existing practices for public disclosure of ESIAs at different levels of the administrative hierarchies;
- *Land acquisition and entitlements*: the rights of people over land territories and access to land and resources as encompassed within customary and/or national laws;
- *ESMF implementation arrangements, monitoring procedures and capacity*: Experience and current status with handling ESMF monitoring, existing institutional arrangements and practices (experience, challenges, capacity gaps, etc.).

The key outcomes from the consultations with federal level stakeholders are as follows:

#### **8.4.1 Benefits and threats of the Flood Control and Protection Projects in the Target Basins**

In terms of benefits, the Project:

- Controls the severe flooding problem of the project areas, which has been causing - damage to people, resources, and infrastructures.
- Provides solutions for the displacements of people in the communities located along the river courses.
- Helps to prevent the severe problem of overtopping in the traditional flood control practices of affected communities, and thereby saves time, labor, and resources from being wasted.
- Creates favorable conditions for productive use by downstream users of the river all year round as the dyke controls the water in the river course.
- Provides ample opportunities for downstream user communities efficiently utilize the waters of the river for their livestock and other domestic purposes.
- Supports the carrying out of irrigation practices/activities by the local community in a sustainable manner as the project/dyke embankment has water regulating structures that enable the regular supply of water and the control of flooding.
- Creates job opportunity for the local inhabitants and other citizens coming to the project sites during project construction and operation phases

Major threats are:

- Aggravating the flooding problem in downstream areas as the dyke is expected to protect water in the river course resulting in the increase of the volume of the river.



- Obstructing human and livestock movement across the river owing to the increase in the volume of the river mainly in downstream areas.
- Denying access to the traditional communal pasturelands causing scarcity of grazing and bruising resources on which the livestock heavily rely, as the dyke may block the river water flowing out and inundate the areas around.
- Restraining agro-pastoral communities living along the river course from engaging in their traditional irrigation practices, as taking irrigation water over the dyke will have gravity problems;

#### **8.4.2 Other Issues of Concern**

##### ***Limited Capacity of ESMF Monitoring and Evaluation***

It was highlighted during the stakeholders' consultations that the inadequate attention given to the monitoring and evaluation of safeguard instruments was a serious drawback. In these respects, the level of awareness, knowledge and commitment required to monitor and evaluate the proper implementation of safeguard instruments is much lower than expected. Experience shows that such kinds of gaps make difficult the process of ensuring full compliance with the policy standards of the government and the World Bank. In connection with this, the Environment and Social Management Framework (ESMF) will have to encompass guidelines, procedures and standards to direct the monitoring and evaluation of safeguard issues at operational level.

In addition, stakeholder consultation participants noted that external consultants deployed on competitive basis should carry out an assessment of compliance with safeguard issues as part of project impact evaluation. Besides, unannounced random field monitoring visits are important to carry out an objective follow-up and observation of project implementation status. Such type of field monitoring can inform all those concerned about the facts on the ground that they may not always obtain in regular reporting formats that are normally filled in and submitted as reporting requirements.

##### ***Limited Capacity and the Need for Capacity Building***

With a view to creating an enabling environment for result-based implementation of the project, IDRMP encompasses as the first of its five components: 'Institutional strengthening and coordination on DRM (Component 1). This component aims at developing the human and institutional capacities of the main implementing sector organizations. In the capacity and support component, attention must also be given to enhancing the capacities of project management units, steering and technical committees at all levels towards the management of safeguard issues and ensuring compliance.

In this regard, stakeholder consultation participants underscore that there are serious capacity

limitations in the MoWE and other implementing agencies in respect to the management of safeguard issues, assigning safeguard specialists and consistently monitoring strict compliance with the safeguard policies/standards of the government and the World Bank. In addition, major concerns were expressed during the stakeholder consultations that the yet-to-be-established PMUs would also have similar practical deficiencies. Hence, as a preparatory measure, it was suggested that funds be earmarked for the recruitment and training of safeguard officers.

As part of the capacity building component, IDRMP will need to organize staff trainings in wide ranging aspect of environmental and social safeguards, the development of the required instruments, implementation and monitoring of compliance, and reporting. With the provision of such capacity building support, PCUs and the safeguard specialists will be better placed to maintain quality standards of the technical advice they provide, the vetting/screening of proposals, as well as in the execution and monitoring of approved sub-projects. Besides, in relation to the description of budget allocations and sources, it is necessary to clearly define in the appropriate project expenditures for safeguard-related costs for trainings, supervision, and technical assistance, the conduct of sub-project specific environment and social assessments, and mitigation measures.

## 8.5 Summary of Issues Raised during public and Stakeholder Consultation

Issues and Concerns	Responses to Address Concerns and Issues
Lack of ownership of the flood control infrastructures to regularly maintain the infrastructures	Woreda or local administration will take the responsibility Continuous awareness creation to the community will be conducted to create sense of ownership
Inadequate consultation with the community. There is a widely held perception that consultation is a onetime event.	continuous consultation will be organized in all phases of the project activities
Lack of commitment on the part of the relevant government offices to allocate adequate funds and their reluctance to release budget on time to manage the flood risks	The project will resolve this problem
Reluctance on the part of the government to resolve the flood risks prior to the onset of floods and flood destruction. The Government is not proactive but reactive to manage flood risks.	The government is committed to be proactive

Issues and Concerns	Responses to Address Concerns and Issues
Flood protection activity could result in reduction of productivity of land over the years as the accumulation of silt after flooding reduces the fertility of the soil. increasing use of compost and fertilizer it can be mitigating this impact and improve soil fertility.	The protection of flood enabling to expand cultivable land and harvesting three to four times a year. Increase the use of compost and fertilizer and improve soil fertility.
Social services such as schools and health posts are located far from the communities	the project should improve their access to social services as the government will be able to build the health posts and schools
<b>Land Acquisition and Compensation:</b> flood protection structures and dikes will require land and that communal and individual land will be impacted. Due to availability of land, the average land holding is higher (ranging from minimum 1.25 ha to 4ha) and the impact on land for sub project activities is expected to be limited.	PAPs will be compensated: <ul style="list-style-type: none"> <li>• regardless of their land holding title;</li> <li>• Land-to-land replacement in the case of loss of land;</li> <li>• Displaced persons should be assisted in their efforts to improve or restore their livelihoods (capacity building opportunities).</li> </ul> The women and the community members consulted are hopeful that the construction of dikes and other structures will enable them to produce three or four times a year in the remaining land and compensate for the loss The PAPs suggested that where impact is significant communal land should be allocated to compensate for land loss
cultural practices conducted under trees and the river side (e.g Erecha) can be impacted by the construction of dikes and other structures.	The cultural practices will be preserved and provisions will be made during construction to ensure access to the water for conducting Erecha and other cultural practices
The flooding constrains mobility of women and other vulnerable groups during flooding.	The project work will be implemented considering this issues and as scheduled

## 8.6 COVID-19 Protocol during Consultation

During the consultation process, basic COVID-19 prevention measures were applied. The consultation was held in a manner which enabled participants to maintain their physical distance. Moreover, it was ensured that everyone was wearing face masks. Finally, hand sanitizer was used

before and after the consultation to reduce the risk of transmission.

## **8.7 Disclosure of ESMF and other ESS instruments**

In compliance with the World Bank guidelines and the Government of Ethiopia EIA Proclamation No. 299/2002, public consultation on and disclosure of IDRMP safeguards instruments are mandatory. MoWE will initiate such consultations as early as possible. Before IDRMP subprojects are approved and before the initiation of physical works, the relevant safeguard documents (ESMP, SEP, LMP, IPMP, ESIA, RAP) need to be finalized as required. The documents must then be made available for public review at a place accessible to local people and in a form, manner and language the communities can understand. The borrower consults project-affected groups about the project's environmental and social aspects and the plans and reports, and takes their views into account before approval. The general public should also participate and be consulted at all levels of environmental and social assessments including eligibility checks, screening, scoping, impact identification and rating. The environmental and social safeguard instruments will be printed and made available at grassroots government offices (*woreda* Information Centers, cities/towns libraries, and other relevant institution offices). Hard and soft copies will be distributed, and be publicly disclosed in the MoWE websites both in country and at the World Bank's info shop and website.

## **9 Grievance Redressing Mechanisms (GRMs)**

The Integrated Disaster Risk Management Project is a multifaceted project having multiple interventions that are mostly expected to have positive impacts in addressing flood risks in the three basins of Ethiopia. Although the project is aimed to prevent/minimize flood risks in these basins by introducing structural and non-structural flood control measures. However, this type of measures will also have negative impacts on the socio-economic and biophysical environment.

Typical grievances that are anticipated from the implementation of The Integrated Disaster Risk Management Projects include claims and complaints from the beneficiaries, lack of transparency during compensation by the PAPs and discrimination based on sex or other physical and health conditions. Restrictions on land use, loss of property, disruption of access paths, corrupt practices during composition, human rights violations, child labor, and gender-based violence and sexual exploitation and abuse are among the potential grievances that may arise during the course of implementation of subprojects. The RPF prepared along with this ESMF provides details on the mechanisms of handling grievances issues related with land acquisition, restriction of access, and compensation and the procedures to be followed thereof.

These types of grievances may come from individuals, groups and institutions that have been affected may by the project. To address complains of the PAPs a well-defined, clear and transparent system for receiving, recording and resolving concerns and complaints shall be established at the specific sub project site level. A well-organized grievance redressing system is an essential to provide remedies to grievances presented by the PAPs early enough to avoid unnecessary project implementation delays and obstructions. The project will conduct a GBV risk assessment to identify GBV related risks and establish procedures such these types of risks.

### **9.1 Institutional Setup of the GRM for IDRMP**

GRM provides forum to discuss grievances by the PAPs and attempt will be made to reach to a consensus between the project owner and the PAPs. It is essential to establish committee composed of local *Kebele* administration or council member; persons represented from the subproject beneficiaries, community elders, members of local youth and women groups. This committee will help to resolve issues and complaints of the project affected persons and make the process faster and cost effective. If the complaint could not be resolved through is means the project affected person shall be advised to present complaint to the formal Grievance Redress and Management Committee (GRMC), which operates at the *Woreda/kebele* Level.

The *Woreda/Kebele* Level GRMC shall be composed of representative of the *Woreda/Kebele* Council, the project Focal Person, reprehensive from the project beneficiaries, representatives from the elder groups and religious institutions and representatives from youth, women group and from the *Woreda/Kebele* Labor and Social Affair office. If the person or group who file the grievance is not satisfied by decision made by *Woreda/Kebele* Grievance Redress Management Committee (GRMC), the cases shall be referred for review and re - consideration to Grievance Redress Committees that will be established at the highest level. The GRMC at the higher level (may be at the regional level) shall be composed of representative from officer from the project, representatives from beneficiaries, elders, traditional and religious institutions, youth, women group and representative from Labor and Social Affair office at the regional level. If the grievance could not be resolved at the second highest level, then affected party shall be advised to take the cases to the regular court for final decision.

Grievances can also be resolved through other means using the existing legal and administrative structures Courts, Police, Anti -Corruption Office and Human Rights Commission if it is the choice of the affected individual to resolve the grievance that way. Project affected parties shall also be informed about the existing legal and formal mechanisms and be allowed to make use of them when and wherever they find it necessary.

## 9.2 Grievance Redress Procedure

### a) *Sub-project Committee Level*

The GRM committee at this level shall record compliments and hear cases as soon as complaints are submitted to them by project-affected groups/individuals. After recording and hearing the complaint, the committee may offer proposal to settle grievance. If project affected party agreed with proposed resolution mechanism and satisfied with the resolution, the case will be closed at this level. If not, the case will be referred to the Woreda/Kebele grievance redress and management committee (WGRMC) for resolution.

### b) *Woreda/Kebele Level*

The Woreda/Kebele Grievance Redress and Management Committee (WGRMC) shall hear, record, and investigate complaint cases as submitted by project affected person as well as referrals from the subproject implementation committees. If project affected person is satisfied with the resolution, the case will be closed. If not, the case shall be referred to the next higher level grievance redress and management committee. Members of the WGRMC will include representatives of women, youth groups, elected PAPs, Community Based Organization /Faith Based Organization representative, Representative of the community social support committee, and Member of the area land management committee.

### c) *Court*

If the complaint could not be resolved by the CGRMC the persona affected has the right to establish his case at the court. If the project-affected households/person accepts the resolution made by the case will be closed at this level. The decision made by the Court of Law will be final. *Cases of e* criminal in nature, such as physical abuse, GBV, sexual exploitation; child labor, theft and corruption are different from the other project related complaints. Complaints of this nature shall be handled in a special way within the GRM to ensure that the information is treated separately and shall be immediately reported to the police for further actions. Communities shall also be sensitized to report criminal cases directly to the police.

Grievances of the IDRMP will be resolved at the *woreda* level. There should not be project grievance that has to be addressed at the regional level and federal level. The decision made by the Court of Law at the woreda level will be final. However, the project implementers at the regional and federal level and the World Bank have the responsibility to ensure that complaints are addressed to the satisfaction of the project affected individual or group and may sometimes request the *woreda* level entities to reconsider their decision if they believe the complaint is not treated fairly.

## 9.3 Grievance Redress Process

The GRM process of Integrated Disaster Risk Management Project consists of five key

activities, which will be performed in managing the grievances forwarded by PAPs. These key activities include:

- 1) Complaint uptake
- 2) Complaint assessment and analysis
- 3) Resolution and closure
- 4) Grievance Registry
- 5) GRM Monitoring and Evaluation.

### ***9.2.1 Complaints Uptake***

The proposed GRM for the Integrated Disaster Risk Management Project GRM will provide multiple options for submission of grievances by project-affected persons in order to minimize barriers from the project owner from forwarding their cases. These options include the following:

- (a) *Face to face*: This may be verbal or written submissions done at any time through face-to-face interactions with members of committees, program officials, local administration structures.
- (b) *Grievance box*: Grievance boxes placed in strategic places of project implementation sites or communities where project affected parties would drop in their grievances at any time.
- (c) *Phone Call or SMS*: This will be at project affected party's own discretion and capability. Where possible, details of relevant immediate contact persons in the project area shall be made available.

### ***9.2.2 Case Assessment and Analysis***

When a complaint is received, a maximum of fifteen Days (15) days will be provided for the GRMC to access, analyze and respond to the affected person. This is so to make sure that grievances/complaints are resolved as early as possible.

Once complaints received, the GRM committees shall assess the issues to ascertain the following:

- Whether the complaint or grievance is related to the project or not,
- Whether the case can be ably handled at their level or another,
- Whether the case can effectively be handled through the project GRM or alternative mechanisms,

Where possible, provision of instant feedback will be made depending on the nature of the cases. If for whatever reason the committee determines that it cannot ably handle the complaint, PAPs shall be advised to channel their complaints to the right alternative grievance redress options or institutions. Otherwise, it will proceed to hear the cases and make necessary investigations to

establish the truth of the matter.

### **9.2.3 Case Resolution and Closure**

Where a resolution has been reached and the affected party accepts the resolution, the affected party along with two members of the GRMC members should sign the resolution and closure section in the Grievance Log and Resolution Form. This shall signify that the complaint or grievance that has been presented has been fully discussed and closed.

### **9.2.4 GRM Registry and Reporting**

All grievances received will be publicly entered into an accessible recording system known as the GRM registry that shall be maintained at all the GRM committee levels. The log and resolution form shall be in triplicate. For any case heard, closed or referred, a copy of the case shall be sent to the upper and lower levels for records.

If the case is handled and resolved at the project level, a copy of the resolution shall be sent to the *Woreda* and another copy shall be sent to *woreda* level Grievance Redress Committee to notify them how the referred case is handled and resolved. This will enable *Woreda/Kebele* level committees to keep a registry of all cases recorded and handled by any GRM committee at that level. Using this information, the GRM monitoring officer will be able to generate a matrix of cases and agreed resolutions for follow-ups and monitor if the resolutions is properly implemented.

### **9.2.5 World Bank Group Grievance Redress Service (GRS)**

According to World Bank Grievance Redress, communities and individuals who believe they are adversely affected by a Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns and impacts. Project affected communities and individuals may submit their complaint to the Bank's Independent Inspection Panel, which determines whether harm occurred, or could occur, because of the Bank's noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the Bank's attention and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's corporate GRS, see <http://www.worldbank.org/GRS>, and Bank's Inspection Panel, see [www.inspectionpanel.org](http://www.inspectionpanel.org)

## **9.3 Grievance Redressing Mechanism for GBV- SEA/SH**

As described earlier, there will obviously be Grievance Redressing Mechanism (GRM) and



procedures (appeal committee) to deal with project-related grievances. However, this GRM may not be comprehensive and suitable to cover or provide the procedures of reporting and referral pathways for GBV- SEA/SH cases. There has to be procedures for project implementers and committee members responsible for dealing with SEA/SH issues that help them to address cases and make appropriate referrals to GBV survivors. The project needs to establish a safe and confidential reporting and investigation process. These necessitate the need to put in place a GRM mechanism to handle SH/SAE cases and give appropriate response to GBV survivors.

The World Bank GPN requires all projects to have a framework for properly handling of GBV allegations by assigning responsible bodies for this purpose: (i) the GRM operator; (ii) the GBV Services Provider and, (iii) the representative of the Implementation Agency. It is therefore essential that prior to GBV complaints being received, IDRMP clearly identify who specifically will be responsible for handling the complaint: who will assess the nature of the complaint, verifying that the survivor has received support, etc. It is advisable to assess the existing modalities for reporting complaints are responsive or not to handle GBV cases and then develop a GBV handling GRM. The GRM should clearly outline how the complaints are received and handled.

To properly address SEA or SH risks, the GM needs to be in place prior to contractors mobilizing. For both SEA and SH complaints, there are risks of stigmatization, rejection and reprisals against survivors. This creates and reinforces a culture of silence so survivors may be reticent to approach project staff directly. Some survivors will choose to seek services directly and never report to the GM, which may lead to a discrepancy in the number of cases reported to the Project by service providers and the GM operators. To enable community members and project staff/workers to safely access the GM, multiple channels through which complaints can be registered in a safe and confidential manner can be enabled.

Specific GM considerations for addressing SEA and SH are:

- The GM is usually operated by the Project, and consideration should therefore be given to a separate SEA/SH GM system, potentially run by a GBV service provider—with feedback to the project GM. The GM operators are to be trained on how to collect SEA and SH cases confidentially and empathetically.
- The Projects must have multiple complaint channels, and these must be trusted by those who need to use them. For communities reporting SEA, this may mean having entry points to the GM at the community level, so that no communities have to go to project offices to report. For staff reporting SEA concerns by other staff members, or SH incidents witnessed or experienced, it may be easier for them to report to a trusted human resources person or other designated SEA/SH focal point within the project.

- Community consultations may be one mechanism to identify effective channels for community members to report SEA (e.g., local community organizations, health providers, etc.) for community reporting, and this should involve separate and specific consultations with women and older adolescent girls.
- Staff consultations are another important mechanism to identify effective channels for employees to report SEA concerns, or SH incidents witnessed or personally experienced.
- No identifiable information on the survivor should be stored in the GM or any other reporting entry point.
- The GM operator should not ask for, or record, information on more than the following related to the SEA/SH allegation:
  - The nature of the complaint (what the complainant says in her/his own words without direct questioning);
  - In cases of SEA, to the best of the survivor's knowledge, if the perpetrator was associated with the project;
  - In cases of SEA, if possible, the age and sex of the survivor; and
  - If possible, information on whether the survivor has been referred to or accessed services.
- The GM operator should assist SEA/SH survivors by referring them to GBV service provider(s) as requested by the survivor for support immediately after receiving a complaint directly from a survivor. This should be possible because a list of service providers would already be available before project work commences as part of the mapping exercise.
- The information in the GM must be confidential—especially when related to the identity of the complainant. For SEA or SH, the GM should primarily serve to: (i) refer complainants to the GBV service provider; and (ii) record resolution of the complaint.

The GBV service provider should have its own case management process to gather the necessary detailed data to support the complainant and facilitate resolution of the case referred by the GM operator. The costs of operating the GM are usually modest and should be financed by the project as part of the general project management costs.

Issues related to GBV that may be raised at the sub project level will be handled by NGO operating in that particular area and will be assisted by the Grievance Redress Committee established at the woreda/kebele level.

### **9.3.1 Steps and Procedures**

Special attention will be given to gender issues, and gender mainstreaming has to be centrally focused in the GRM. Complaints lodged by gender are on priority and prompt action is needed to be taken without any excuse to delay. Each committee at all levels will have a female member and will be the key focal point for gender related issues and complaints. Privacy and confidentiality will be ensured of the female complainant in the entire process of resolution. Gender meeting will be conducted separately in secure place. The gender disaggregated data will be available for tracking and monitoring of gender associated issues and progress on actions/outcome. Handling GBV Complaints need to have a framework for handling GBV allegations. As mentioned above, there are at least three key actors involved in handling GBV allegations: the GRM operator; the GBV Services Provider and, the GBV resolution committee. It is therefore essential that prior to GBV complaints being received both clearly identify who specifically will be responsible for handling the complaint: what sanctions will be applied and, the survivor is safe after raising a complaint. To make the process of receiving and handling GBV cases efficient and effective, the following steps will have to be followed.

#### **Step 1: Staffing and registration**

The first step for receiving and handling GBV complaints is to have a safe and supportive environment and trustworthy staff so that survivor can easily raise her/his complaint. Grievance Handling operators need to be assigned to receive and register the GBV complaints with full confidentiality. The GRM operator should have knowledge about GBV and the ability to use a survivor-centered approach in the interactions with survivors. Complaint handling is a limited process and the GRM operator must always be careful not to exceed the scope of their roles during evidence gathering. The only role of the GRM operator at this stage is to receive the initial complaint, determine any immediate protection or assistant needs of the complainant, and process onward referrals. The database webpage that she uses for GBV cases is protected and limited to a few individuals such as those only authorized in the complaints handling team. If any complainant is not happy with how the complaint has been handled, they should be provided with opportunity to discuss their cases at a higher level.

#### **Step 2: Referring to available GBV service providers**

The GRM operator should provide healing messages, refer to menu of services to explain what's available, free of charge and referrals should be based on survivor's complainant's informed consent, tangible and clear information is provided, according to his/her preference and inform the survivor that his/her case will only be shared with his/her informed consent.

### **Step 3: Referring the case to GBV Resolution Committee**

The grievance handling officer reports the case to the GBV Resolution Committee. The committee as soon as they receive the case, starts assessing the case maintaining confidentiality, survivor centered approach, and in a timely manner. It is a proven practice that based-on survivor centered approach the survivor can choose which way the case should be resolved. It means that the survivor can choose the solution (formal/informal) based on her needs, status and probable consequences. GBV resolution Committee comprising trained personnel from Senior Management, and from Gender Unit to review each GBV complaint/allegation received individually. The Senior Management member will act as focal point on the senior management team for SEAH case investigations and other committee members will receive training on how to conduct fair and robust survivor centered investigations and GBV.

### **Step 4: Investigation and response to GBV complaint**

The case will be disclosed to the GBV resolution committee only (only if the survivor permits) and investigation starts. The investigation is taking place within a course of actions as follow:

- Face to face and private interviews with survivor and perpetrator.
- Interview with the office-mate and colleague of both survivor and perpetrator (if needed)
- Group discussion among GBV resolution committee on how to solve the case

Following training on survivor centered investigations, the committee will strive to conduct investigations underpinned by the principles of impartiality, non -discrimination and confidentiality. If the complainant doesn't want to disclose her/his name but just want to bring that bad behavior or SEA/SH case to the attention of the alleged person's supervisor through the GRM person, she should be able to do so.

### **Step 5: Case conclusion**

The length of time that conclusion of a GBV case takes greatly vary from case to case. The investigation report along with decision taken or recommendations is submitted to the senior management. If the investigation concludes the allegations are valid and abuse has likely occurred then sanctions will be applied on the perpetrator based on the nature and level of GBV. The sanction cited from code of conduct, are informal warning or formal warning, additional training, loss of salary, suspension of employment (with or without payment of salary), Termination of employment, report to the police or other authorities as warranted. The final decision that is taken by GBV resolution committee and any disciplinary action signed on the perpetrator will be reflected in her/his HR profile. Sometimes survivors may request the closure of the case, even if they haven't had all their needs met. The team should respect this request and must ensure that the

cancellation is completely voluntary and unconstrained. Also sometimes the alleged resigns in the middle of case investigation, in such cases the investigations should continue regardless of whether the alleged resigns and any conclusions including the fact that an investigation has taken place should be placed on file and the process of the investigation is documented to be updated on the system. After the case is closed on the system in accordance with data protection and archiving policies, all printed material that is no longer needed should be vanished. If the printed papers should be stored, then lock it in a file cabinet or other secure container, and limit access to others.

: By closing the GBV complaint, any survivor should feel safe to return to the GBV resolution committee or to complaint once again if s/he faced violence because raising a complaint increases the risk of harm more in some cases. The survivor is referred to the GBV services providers if she needed psychological and emotional support, only if she permits to share the case to the service provider.

### **Communicating and GRM Publicity**

A policy or process for addressing complaints cannot be effective if nobody knows about it and therefore grievance procedures should be put into writing, publicized, and explained to relevant stakeholder groups. People should know where to go and whom to talk to, if they have a complaint and understand what the process will be for handling it. It should be provided in a format and language readily understandable to the local population, direct beneficiary/users of facilities, project staff and/or communicated orally in areas where literacy levels are high. It should not be too complicated to use nor should it require legal counsel to complete the grievance process. It's mentionable that the GVB cases must handle securely and confidentially based on the GBV handling procedure mentioned in the GVB related parts within this document.

### **Communication Channels and Methods**

The ways and means through which GRM procedures are communicated, is dependent on the scope of projects, types of stakeholders, geographical location of projects, beneficiary characteristics and feedback etc. The best channel to be used is the one which transfer the encoded message to the receiver, with high impact and feedback and of low cost. The method used should be simple and that best illustrate to the conditions. The GRM poster that reflected all official uptake channels include hotline number, social media address and GRC designed and will publicizes in the project area with the help of community elders the most highlights point in the project areas. The common channels to be used are Public disclosure at each site through printed materials e.g. flyers, grievance forms and GRM poster etc. organizing GRM events and briefings, articles written in newsletter on grievance resolution, training sessions and staff capacity building, interpersonal communication/Face-to-Face meetings, circulation of complaint specific e-mail, circulation of GRM representatives contact details, using digital modality such as webpage and social media, opinion survey regarding the GRM functioning, TV and Radio announcement, site visits Aspects

of GRM Communication Plan Introducing the GRM requires planned actions and the aspects to be considered when designing a GRM communication plan. The contents of information in the publicity materials or verbal communication should be sufficient and enough. There should be no gap in provision of information and the publicizing sources should be easily accessible. The following information components are necessary to be included while publicizing grievance management procedures;

- What project-level mechanisms are (and are not) capable of delivering and what benefits complainants can receive from using the project or organization grievance mechanism, as opposed to other resolution mechanisms?
- Who can raise complaints (affected persons)? • Where, when, and how complainants can file complaints?
- Who is responsible for receiving and responding to complaints, and any external parties that can take complaints from grievant?
- What sort of response complainants can expect from the project or organization, including timing of response? •
- What other rights and protection are guaranteed (compensation, protection from victimization)?

### **Messages of Communicating GRM**

The message of communicating GRM should reflect the following points:

- Grievances can help improve project policies, systems and services delivery
- Grievances will be treated confidentially, and complainants will not be victimized
- Grievant has the legal right to lodge complaints upon experiencing any discomfort and dissatisfaction by project activities
- Grievances management improve the system and build trusts among the stakeholders
- Grievances lodging and resolution is a sense of pride to all Operationalization.

## **10 Monitoring of ESMF Implementation**

After the required safeguard instruments (ESMF, ESIA, PMP, and RAP) prepared, reviewed and approved, and environmental and social clearance received from EPLAUA, the relevant implementing agencies (either at basin, sub-basin, and *woreda* or federal level) which the subproject refers to are the main responsible bodies to ensure the implementation of the mitigation measures identified and planned in the ESMPs and/or ESIAs, RAPs/s, and PMP. The community at basin and sub-basin levels has also contribution in the implementation of mitigation measures.

The objectives of ESMF monitoring and follow-up are:

- ✓ To alert project managers by providing timely information about the success or otherwise of the environmental and social management process outlined in this ESMF in such a manner that changes

can be made as required ensuring continuous improvement to IDRMP environmental and social management process.

- ✓ To make a final evaluation in order to determine whether the mitigation measures incorporated in the technical designs and the ESMP & other safeguard instruments have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon or is worse than before and to determine what further mitigation measures may be required.

### **10.1 Process monitoring**

The purpose of environmental and social process monitoring is to check whether the different safeguard instruments (ESMP, ESIA, RAP, and PMP) are prepared, reviewed, and approved; the quality of the safeguard instruments prepared; the implementation of the mitigation measures identified and planned in the safeguard instruments; the participation of the community and other stakeholders in all these processes; capacity building processes; reporting; and others. The monitoring is done by IDRMP implementing structures/committees at grassroots/basin office and city/town level implementing the ESMP, ESIA, RAP, and PMP; *Woreda* EPLAUA; federal IDRMP environmental and social safeguards specialists; and the community. Monitoring will be carried out in accordance with the ESMP and other safeguard instruments prepared for each subproject.

### **10.2 Result monitoring**

The results monitoring plan has two components: i) monitoring of the compliance and effectiveness of the ESMF and application of the recommended standards; ii) impact monitoring, i.e., measuring the socio-economic impacts of the Project interventions.

All stakeholders undertaking process monitoring conduct result monitoring. The purpose of result monitoring is to support compliance with safeguard policies, to identify the emergence of any unforeseen safeguard issues, to determine lessons learnt during project implementation; to provide recommendations for improving future performance; and to provide an early warning about potential cumulative impacts. Besides, the World Bank, as necessary, will periodically conduct reviews of the implementation of the ESMF, RPF, and other safeguard instruments under IDRMP. The basin office steering committees together with the *woreda* EPLAUA also conduct environmental and social audit periodically.

Moreover, final evaluation will be done by independent consultant in order to determine whether the mitigation measures designed into the sub-project interventions have been successful in such a way that the mitigation measures are properly in place and environmental and social condition positively maintained.

### **10.3 Environmental and Social Monitoring Indicators**

A number of environmental and social monitoring indicators and parameters can be used to track

the performance of the ESMF of IDRMP. Some of these indicators and parameters include:

- 1) Number and type of target groups participated on the ESMF training and awareness creation program;
- 2) Number of capacity building trainings given, size of participation, and composition of the participants;
- 3) Number and type of sub-projects into which social and environmental safeguard issues have incorporated;
- 4) Number of social and environmental safeguard screening checklist prepared and used;
- 5) Number and percentage of subprojects for which environmental and social issues are integrated in to the project cycle;
- 6) ESMP, ESIA, RAP, and PMP prepared;
- 7) Impact mitigation measures taken into consideration during IDRMP sub-project design, planning, site selection and implementation phases.
- 8) Conflict in land and water use right between neighboring *kebeles/woredas* and between upstream and downstream water user communities during subproject implementation;
- 9) Documentation of community consultation in both the upstream and downstream including their opinions;
- 10) Environmental enhancement and adverse impact mitigation measures mentioned in the Environmental and Social Management Plan and have been incorporated and considered during project planning, design and site selection;
- 11) Implementation of the mitigation measures identified and planned in the ESMP;
- 12) Places for collection of construction materials (quarry sites, borrow pits), collection/operation method and its environmental consequences;
- 13) Provision of appropriate compensation for land acquisition and property loses, and their proper documentation;
- 14) Disposal method, site of spoil and construction wastes disposal and its environmental and social consequences;
- 15) Increase in landslide, soil erosion and slope instability due construction activities;
- 16) Impact on water quality and disruption of natural water courses, drainage work and its consequences.

#### **10.4 Environmental and Social Standards compliance reporting**

In view of the significant nature of the impacts of some of the activities of IDRMP, a robust system of compliance monitoring and reporting should be in place. Quarterly and annual reports should be prepared and pass the hierarchy from *woreda*/city/town, sub-basins, basins, and federal levels.

The Basin and Federal PMU Environmental and Social safeguard Specialists are normally required to report the quarter and annual reports on the performance of the subproject activities during the preceding quarter and year, respectively. Procedurally, the report of environmental and social safeguard and other IDRMP activities sent by local focal persons will be consolidated at basin level



by PMU M&E specialists with the support of the MoWE/BDA safeguard specialists. These quarter and annual reports should capture the experience with implementation of ESMP ESIA, RAP/, and PMP procedures. The purpose of the reports is to provide (i) A record of the subproject transactions; (ii) A record of experience and issues running from quarter-to-quarter/year-to-year throughout the subproject that can be used for identifying difficulties and improving performance; and (iii) Practical information for undertaking an annual review.

The environment and social safeguard experts at the federal Project Management Units (PMU) will prepare quarterly, and annual reports based on the basin/sub-basin/*woreda* report including his/her accomplishment report by filling the report format and will submit to the Basin M&E team and a standalone report to federal PMU. At the federal level, the stand alone & the quarterly and annual report will be collected from the M&E team, the Environmental and Social Safeguard Specialists will check the report and submit a consolidated report with the necessary narration and standalone report to the M&E team and Development Partners including WB, respectively. The objectives of national level report are 1<sup>st</sup>. to consolidate and summarize the performance of each regions; 2<sup>nd</sup>. to assess the overall progress of the IDRM subprojects at the national level; and 3<sup>rd</sup>. to give feedback to regions.

### **10.5 Environmental and Social Auditing/Review**

Environmental and social auditing is defined as "a systematic, periodic, documented and objective review of project activities related to meet environmental requirements". It has been universally accepted as one of the components of Environmental and Social Management Plan (ESMP) and should be undertaken after construction, during operation, and upon the completion of the project decommissioning as well in the entire life of the project. It is a process that enables an organization to assess and demonstrate its social, economic and environmental benefits and application of appropriate mitigation measures. The audit/review involves evaluation to identify compliance of social and environmental aspects of projects (to applicable compliance requirements) and identify implementation gaps, along with related corrective actions.

Environmental and social auditing is conducted to assess the compliance of implementation to project safeguard instruments with regard to the intermediate environment and social impacts of the IDRM interventions, and to evaluate the occurrence of, and potential for, cumulative impacts due to project-funded and other development activities. Monitoring improves decision making and ensure that the project is environmentally sound, socially acceptable and economically feasible.

Environmental and social auditing will be conducted through annual and quarterly reviews. The results of the annual and quarterly reviews will be used by project management to improve procedures and capacity for integrating natural resources and environmental/social management into project operations. The review will also be a principal source of information to Bank supervision missions. Annual reviews of the project and the implementation of the ESMP ESIA,

RAP, and PMP will be conducted at the end of each year facilitated by the PMU. The review will require two to three weeks depending on the basin or city/town performance of the environmental and social safeguards. The objectives of the annual reviews include (i) Assess project performance in complying with ESMP ESIA, RAP, and PMP procedures, gaps identified, lessons learnt, and improve future performance, and (ii) Assess the occurrence of, and potential for, cumulative impacts due to project-funded and other development activities.

The audit/review should be conducted by an independent consultant to be contracted by the PMU. The roles and responsibilities of the independent consultant are (i) assess the adequacy of the ESMF process and procedures, (ii) assess the adequacy of ESMF roles and responsibilities, (iii) assess the needs for further training and capacity building, (iv) identify key risks to the environmental and social sustainability of the proposed project activities, and (v) recommend appropriate measures for improving ESMF performance. The compliance assessment and performance review reports, which will be produced by the independent review body, will be used as a monitoring and review tool to track ESMP and SMP results. The annual review report should be delivered to the PMU, to each basin office responsible for appraisal, approval and implementation of subprojects and to the Bank as well. In the review process, the PMU will play the lead role in coordinating the process with the key stakeholders. The principal output is a review report that entails the methodology, summarizes the results, and provides practical recommendations.

It is also possible that the environmental and social audit may be conducted by duly trained environmental and social safeguard specialists of the PMU and this can be verified by an independent local and/or international consultant hired by the Bank.

## 11 ESMF Implementation Arrangement and Capacity Building

### 11.1 ESMF Implementation Arrangements

Since the existing environmental and social risk management staff in MoWE have already been overloaded with the ongoing project activities, this project will establish a standalone E&S risk management implementation arrangement. The main organization responsible for the implementation of the ESMF at federal level is the MoWE through its PMU. The MoWE, through the IDRMP-PMU, will play a leading role in ensuring the proper implementation of the ESMF. It will guaranty that the applicable Government of Ethiopia (GoE) rules and regulations as well as World Bank Environmental and Social Standards (ESS) requirements are enforced. At federal level, the client will deploy qualified environmental and social safeguards specialists dedicated for this project who will oversee the environmental and social risk management issues. These Environmental and Social safeguard specialists within the PMU are responsible to follow-up the implementation of the ESMF.

MoWE/BDA and the basin and sub-basin offices of the targeted basins at subproject sites will be at the lead for implementing Environmental and Social Safeguards (ESS) for the program. Depending on the nature and scope of subprojects, safeguard assessments, documentations and approvals can be undertaken at federal and subproject site levels. The federal Project Management Units (PMU) will recruit Environmental and Social Safeguard experts to oversee ESS planning, implementation, monitoring and evaluation and reporting activities of the project.

In the target basins, for basin-level flood risk management investments, basin and sub-basin level ESMF implementation structures/committees may be established for each subproject, involving the relevant *woreda* offices where the subproject is undertaken. These offices include, the *woreda* offices of water and energy; the *woreda/kebele* administration, agriculture; Environmental Protection and Land Use Administration (EPLUA)/Environment, Forest and Climate Change (EFCC) office; relevant research institutions, private investors in the subproject area, Project Affected Persons (PAP), women and social affairs, among others. To this effect, at *woreda* level where IDRMP subprojects are implemented, Steering Committee (IDRMP Basin Development Office Steering Committee) comprising of relevant offices will be established to ensure the implementation of the subproject activities and to oversee the tasks of the respective ESMF structures/committees.

The overall responsibility for supervision of the implementation of the ESMF at grassroots level will thus be entrusted to this Committee together with the Office of EPLUA/EFCC at *woreda* level. The structure/committee will be entrusted with the responsibility of appraising and reviewing subprojects, particularly from the perspective of ESS, gender equity, compliance with rules, and any issues raised by the grassroots communities where the subproject is executed. Approval of ESS procedures and documents as well as conducting annual environmental and social audits will be the responsibility of the respective EPLUA/EFCC at *woreda* levels. Compliance with

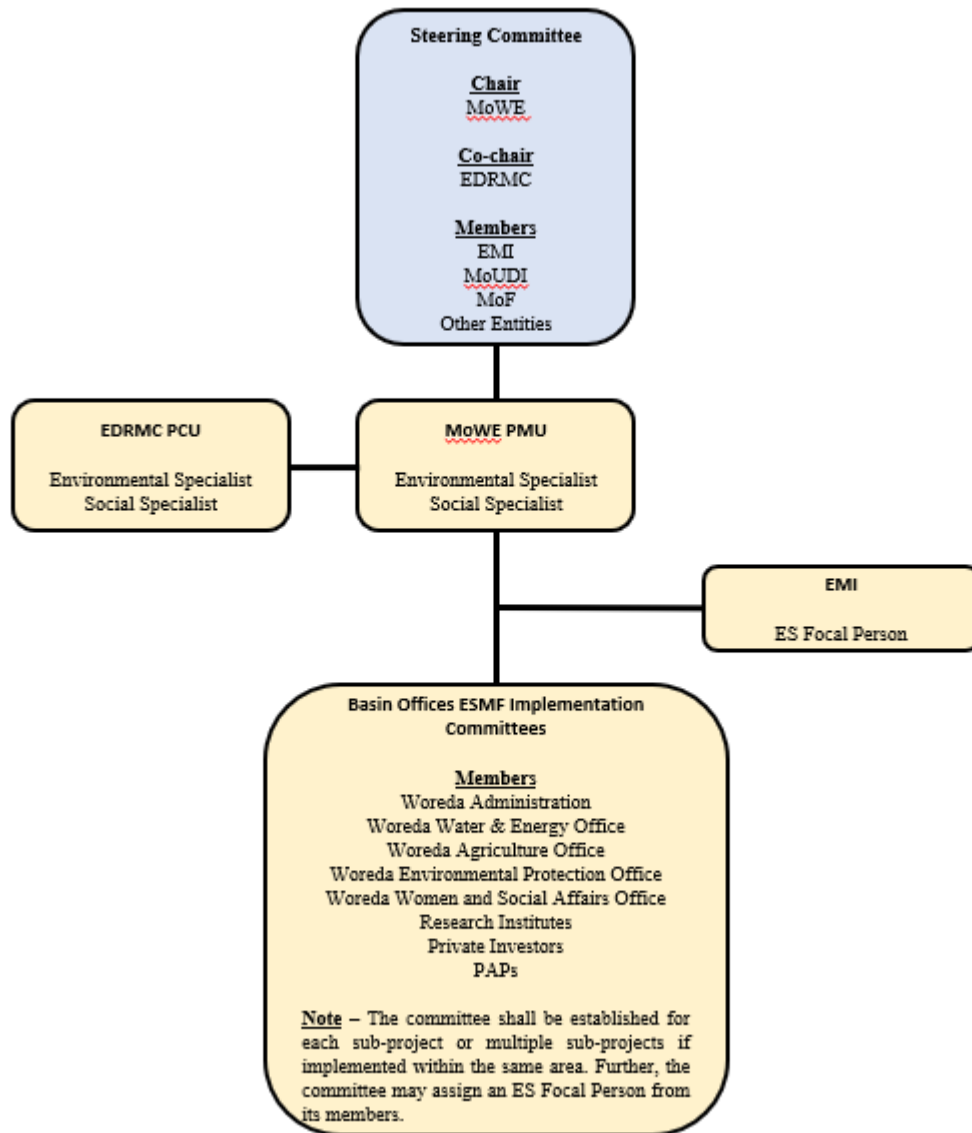
environmental and social standards shall be monitored periodically. The project implementing entities will prepare quarterly and annual environmental monitoring reports. There will be independent annual environmental and social audits. The *woreda*, and if necessary the regional, EPLUA/EFCC office will review and endorse site specific environmental and social risk management instruments and will also monitor compliance with the regulatory requirements.

Before submitting the environmental and social screening of subprojects with application for review and approval by the relevant EPLUA, it will be checked and approved internally by the Committee. In fact, there are committees already established at basin offices level for the purpose of facilitating the implementation of emergency flood protection works carried out by BDA over the years, and for addressing social and environmental safeguard issues and concerns raised by beneficiary communities. These will be strengthened and revitalized to suit IDRMP subprojects and ESMF implementation. *Woreda* level Compensation and Resettlement Committee (CRC) already in place in every *woreda* ensure, together with IDRMP Basin Office Steering Committee, oversee and monitor the implementation of the RPF which is a separate document prepared to address resettlement related issues for IDRMP subprojects.

The EDRMC with the mandate to lead overall DRM coordination and mainstreaming DRM across sectors will be implementing activities under Component 1, and coordinating Sub-components 2.2, 2.3, and 2.4. For this, EDRMC will set up a Project Coordination Unit (PCU). Since these soft components of the Project could pose environmental and social risks, one environmentalist and one social development specialist will be recruited and assigned to work under the PCU in EDRMC and reporting on the management of E&S risks to MoWE PMU.

A review of the documents compiled for the preparation of this ESMF reveals that there is a capacity gap to fully implementing safeguard issues. Most notably, the absence of separate and well-staffed environmental and social safeguards unit in the MoWE and basin and sub-basin offices is observed as a major capacity gap. To minimize the risk of safeguard issues being neglected or undermined and also ensure proper compliance, recruited safeguard experts, engineers and other project staffs will need to be trained in the environmental and social management procedures, World Bank's environmental and social standards and government safeguard regulations. The project will facilitate opportunities for new specialists to get experience from the existing specialists implementing other projects. Trainings will be organized in various topics related environmental and social risk management. The E&S specialists will be trained on the key requirements of the ESF of the Bank and on the environmental and social management framework of the project and other pertinent E&S instruments.

**Figure 6: ESMF Implementation Arrangement**



**Table 11: Summary of ESMF Implementation Arrangement**

No.	Major ESMF Implementation Body/Staff	Role and Responsibility	Implementation Level (Federal/Regional/Basin/Local)	Focused IDRMP Component
1	Ministry of Water and Energy (MoWE)	<ul style="list-style-type: none"> <li>• Undertaking policy studies for the implementation of water resource management within basins;</li> <li>• Studying and implementing flood protection forecasting and early warning;</li> <li>• Providing support to promote expansion of meteorological services;</li> <li>• Executing IDRMP with the functions of overall coordination, management and supervision.</li> <li>• Ensuring the proper implementation of the ESMF;</li> <li>• Guarantying that the applicable GoE rules and regulations as well as World Bank (ESS) requirements are enforced</li> <li>• Recruiting and assigning enviromental and social development specialists to work under the PMU in MoWE and reporting on the management of E&amp;S risks</li> </ul>	Federal and basin level	All four Project components
2	Ethiopian Disaster Risk Management Commission (EDRMC)	<ul style="list-style-type: none"> <li>• Leading overall DRM coordination and mainstream DRM across sectors;</li> <li>• Developing and implementing comprehensive contingency plans at all levels;</li> <li>• Leading and coordinating the Federal Early Warning and Emergency Coordination Center;</li> <li>• Leading overall DRM coordination and mainstreaming DRM across sectors to implement activities under Component 1 and Component 2;</li> <li>• Recruiting and assigning enviromental and social development specialists to work under the PCU in EDRMC and reporting on the management of E&amp;S risks to MoWE PMU.</li> </ul>	Federal and basin levels	All four Project components
3	Basin Development Authority (BDA)	<ul style="list-style-type: none"> <li>• Studying and implementing flood protection forecasting and early warning works;</li> </ul>	Federal and basin and sub-basin levels	Components 2 and 4

No.	Major ESMF Implementation Body/Staff	Role and Responsibility	Implementation Level (Federal/Regional/Basin/Local)	Focused IDRMP Component
		<ul style="list-style-type: none"> <li>Ensuring that projects, activities and interventions related to water in the basins are in line with the integrated water resources management process;</li> <li>Developing plans for protection and sustainable uses of basins; undertake administration of river training activity;</li> <li>Under MoWE, implementing Environmental and Social Safeguards (ESS) for the subproject activities in the targeted basins.</li> </ul>		
4	Ethiopian Metrology Institute (EMI)	<ul style="list-style-type: none"> <li>Establishing and operating a national net-work of meteorological stations;</li> <li>Giving advance warning on adverse weather conditions; disseminate advice and educational information through the mass media;</li> <li>As a member of the National SC and working in collaboration with MoWE-PMU, implement the activities under Sub-Component 2.2 and 2.3, including safeguards.</li> </ul>	Federal, basin and sub-basin levels	Component 2
5	Ministry of Urbanization and Infrastructure (MoUI)	<ul style="list-style-type: none"> <li>Designing and implementing policies, strategies relating to urban development and construction;</li> <li>Undertaking studies relating to urbanization;</li> <li>Providing capacity building support to regions and facilitating the integration of infrastructure and services provision;</li> <li>As a member of the National SC and working in collaboration with MoWE-PMU, implement the activities under Sub-Component 2.4, including safeguards.</li> </ul>	Federal, basin and sub-basin levels	Component 2
6	Federal Steering Committee (SC)	<ul style="list-style-type: none"> <li>Oversight of the implementation of Project;</li> <li>Providing strategic direction and policy guidance in Project implementation;</li> <li>Approving annual plans and budgets;</li> <li>Ensuring high level inter-ministerial/agency coordination and collaboration, harmonization and alignment among donors.</li> <li>Review the progress of the project and evaluate work plans on semi-annual and annual bases.</li> </ul>	Federal level	All four Project components

No.	Major ESMF Implementation Body/Staff	Role and Responsibility	Implementation Level (Federal/Regional/Basin/Local)	Focused IDRM Component
7	Projects Management Unit (PMU) under MoWE	<ul style="list-style-type: none"> <li>Overall technical level coordination among Implementing Agencies (IAs);</li> <li>Annual activity planning; fiduciary management; and procurement;</li> <li>Safeguard issues; liaising with federal stakeholder groups; and project communication;</li> <li>Participate in sub-project identification, preparation, screening, ES instrument preparation, and implementation for sub-projects at national and regional level (where applicable)</li> <li>Consolidation of M&amp;E and other reporting;</li> <li>Strategic staff capacity-building and mobilization.</li> </ul>	Federal, basin and sub-basin levels	All four Project components
8	Project Coordination Unit (PCU) under EDRMC	<ul style="list-style-type: none"> <li>Overall technical level coordination among Implementing Agencies (IAs);</li> <li>Annual activity planning; fiduciary management; and procurement;</li> <li>Safeguard issues; liaising with federal stakeholder groups; and project communication;</li> <li>Participate in sub-project identification, preparation, screening, ES instrument preparation, and implementation for sub-projects at national and regional level (where applicable)</li> <li>Consolidation of M&amp;E and other reporting;</li> <li>Strategic staff capacity-building and mobilization.</li> </ul>	Federal, basin and sub-basin levels	All four Project components
9	National Project Coordinator (NPC)	<ul style="list-style-type: none"> <li>As a fulltime employee, oversees and executes the implementation of project activities, including safeguards, monitoring and evaluation and reporting.</li> </ul>	Federal, basin and sub-basin levels	All four Project components
10	Federal level ES Safeguard Specialist	<ul style="list-style-type: none"> <li>Overseeing the environmental and social risk management issues,</li> <li>Follow-up the implementation of the ESMF.</li> </ul>	Federal, basin and sub-basin levels	All four Project components.
11	Woreda Offices (administration, water, agriculture, etc) Water and Energy	<ul style="list-style-type: none"> <li>Serving as member of basin and sub-basin level ESMF implementation grassroots structures/committees for supervision of the implementation of the ESMF during project implementation and operation periods.</li> </ul>	Basin and sub-basin levels	All four Project components
12		<ul style="list-style-type: none"> <li>Serving as member of federal, regional, basin and sub-basin</li> </ul>	Federal, regional, zonal, woreda,	All four Project components



No.	Major ESMF Implementation Body/Staff	Role and Responsibility	Implementation Level (Federal/Regional/Basin/Local)	Focused IDRMP Component
	<i>Federal, regional, zonal, and woreda environmental protection commissions, authorities, or offices</i>	<p>level ESMF implementation grassroots structures/committees for supervision of the implementation of the ESMF;</p> <ul style="list-style-type: none"> <li>• Approving of ESS procedures and documents;</li> <li>• Conducting annual environmental and social audits</li> <li>• Depending on the type and location of sub-projects, reviewing and endorsing sub-projects environmental and social risk management instruments (including screening reports) and monitor compliance with the regulatory requirements;</li> <li>• Periodically monitoring compliance with environmental and social standards, and together with implementing entities preparing quarterly and annual environmental monitoring reports.</li> </ul>	basin and sub-basin levels	
13	Basin and Sub-basin Offices	<ul style="list-style-type: none"> <li>• Participate in field level sub-project identification, preparation, screening, ES instrument preparation, and implementation for sub-projects at national and regional level (where applicable)</li> <li>• Follow up the implementation of Environmental and Social Safeguards during implementation and operation periods;</li> <li>• Assessment and documentation of safeguard and approvals at subproject site levels.</li> </ul>	Basin and sub-basin levels	All four Project components
14	IDRMP Basin Office Steering Committee (SC)	<ul style="list-style-type: none"> <li>• Ensuring the implementation of sub-project activities and to oversee the tasks of the respective ESMF structures/committees;</li> <li>• Supervision of the implementation of the ESMF at grassroots level;</li> <li>• Checking and approving the environmental and social screening of subprojects before submission for approval by EPLUA/EFCC.</li> </ul>	Basin and sub-basin levels	All four Project components
15	Woreda Compensation and Resettlement Committee (CRC)	<ul style="list-style-type: none"> <li>• Overseeing, together with IDRMP Basin Office Steering Committee, the implementation of the RPF for IDRMP subprojects.</li> </ul>	Basin,sub-basin and local level.	Component 2

## 11.2 Capacity Building for Environmental and Social Standard

Creating awareness among the *woreda* communities in the basins and sub-basins on the impacts and benefits and action that should be taken to minimize impacts of the subprojects is very crucial. To this effect, there is a need to develop a training plan to build the capacity of all development actors who in one way or another will participate in the execution and supervision of the project. Depending on the capacity building needs identified during the Performance Reviews or M&E, refresher courses will also need to be given in the course of subproject implementation.

Technical training on ESMF and RPF will mainly focus on the technical staffs that will be involved in directly applying the ESMF and RPF procedures. It includes the experts at IDRMP-PMU at federal and city/town levels, member of technical committees, IDRMP Basin Office Steering Committee members etc. The training will focus in explaining the details of the national and World Bank environmental requirements and the procedures that need to be fulfilled to comply with it. Implementation of the ESMF and RPF including all aspects of the World Bank ESSs, environmental management, ESIA, public consultation, and integration of environmental management into development planning will be the center topics for the training. The training would also cover skills upgrading refreshment topics such as, environmental and social screening and categorization processes, ESIA review and quality assurance, environmental audits, and environmental guidelines. The training can be offered to the target groups at federal, city/town, *woreda* or community levels.

Areas identified for training include:

- Training on the role the community during the screening, planning, reviewing, implementation and monitoring process of the sub-projects;
- Training on environment related national policies, laws, regulations policies that should be respected during the implementation of sub-projects;
- Training on the World Bank environmental and social safeguards standards triggered by IDRMP;
- Training on environmental and social assessment, ESIA approval processes, reporting and monitoring; and preparation of environmental management plan;
- conducting regular awareness workshop with the community to update progress and to create awareness on the institutional arrangement, procedures and process of implementing the sub-projects;

### 11.2.1 Proposed Environmental Management Topics

ESMP, ESIA, RAP, and PMP of the IDRMP are important tools that provide guidance on

how to incorporate mitigation measures and to minimize adverse effects of sub-projects. These tools will serve to guide the selection of sub-projects and will be essential in managing potential environmental and social effects at early stages of the project life-cycle.

Technical training will be providing to the project management staff that are directly involved at federal (PMU, PCU, EMI, concerned government offices) and grassroots levels (basin offices esmf implementation committees) in environmental and social management and monitoring. The topics of training for the technical staff include:

- **Introduction to Environmental and Social Management Framework.** This section will introduce participants to the theory and application of ESMF as a decision-making tool. It will outline the principles of ESMF and provide clear definitions of terminologies applied on environmental management systems practice (e.g. screening and scoping, impacts [negative, positive, cumulative] natural resource base (water, soil, land, biodiversity, air, etc.), social baseline (employment, social, health, literacy etc.) and mitigation and monitoring. It will also provide guidance on the criteria required for the development of an effective ESMP in practice.
- **Ethiopian Environmental Legislation:** This section will discuss the application of Ethiopian legislation in terms of the relevant environmental and social laws and policies which apply to activities under the IDRMP.
- **Screening of IDRMP Sub-projects:** A list of potential activities to be financed under the project will be discussed. Application of the screening checklist will be explained using case studies.
- **Impact Identification:** Potential impacts related to various types of activities will be discussed, in terms of their significance (adverse or minimal, positive or negative), magnitude (long term versus short term), and impact category (localized or cumulative).
- **Mitigation Measures and Implementation Monitoring** as they apply to various types of project activities will be discussed, in terms of their application, cost and feasibility. Training will also be provided on the importance of monitoring to gauge the effective implementation of the mitigation plans.
- **Responsibilities for Planning and Reporting:** For each technical staff, responsibilities for environmental and social management will be discussed as they relate to IDRMP subprojects implementation. This will include responsibilities for planning, management of impacts and mitigation measures, monitoring, partnerships with NGOs and technical service providers, and the reporting of outcomes achieved in implementing the mitigations as well as monitoring plans.

- **World Bank Environmental and Social Standards:** Detailed application of the Environmental and Social Standards relevant to the IDRMP, i.e.,
  - ESS1: Assessment and Management of Environmental and Social Risks and Impacts
  - ESS2: Labor and Working Conditions
  - ESS3: Resource Efficiency and Pollution Prevention and Management
  - ESS4: Community Health and Safety
  - ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
  - ESS6: Biodiversity Conservation and Sustainable Management of the Living Natural Resources
  - ESS7: Indigenous People / SSAHUTLC
  - ESS 8: Cultural Heritage
  - ESS10: Stakeholder Engagement and Information Disclosure

In addition to capacity building training to be provided for the technical team, members of communities which are engaged in sub-projects implementation will be provided with training on the following topics:

- Background of the IDRMP – its objectives, beneficiaries, and footprints
- Participatory sub-project planning
- Project and sub-project activities/interventions and associated potential environmental and social impacts including occupational and community health and safety issues
- Stakeholders’ engagement, consultation, and partnership
- Development and implementation of mitigation measures for the identified impacts
- The grievance redress mechanism
- Prevention and response to gender-based violence including sexual exploitation and abuse, sexual harassment
- Labor influx and management.

### ***11.2.2 Requirement of Technical and Financial Support***

Owing to the expressed shortages to staff environmental and social safeguard focal persons in the IDRMP project implementation organs such as the PMU and in Steering Committees at city/towns and *woreda* levels, devising a financial mechanism to incentivize appropriate environmental and social safeguard focal persons to work on fulltime basis on the IDRMP project will be necessary. The project owner will be required to provide the following technical assistance to all project staff that will be involved in the implementation of the proposed project

- a) Technical and financial assistance to each participating *woredas* hosting subprojects to secure consultancy services to carry out the following:
  - An ESIA ToR, Partial/Full Environmental and Social Impact Assessment, Environmental and Social Management Plan, Cultural Heritage Management Plan or full/abbreviated Resettlement Action Plan; and
  - Establish and support operation of systems for monitoring and reporting on partial/full ESIA, ESMP, and RAP implementation.
- b) Appointment of IDRMP Environmental and Social Specialists at the regional and *woreda* levels for overall ESMF & RPF implementation.

### ***11.2.3 Appointing Environmental and Social Specialist***

It is important to maintain the Environmental and Social Specialists as part of the Federal IDRMP PMU to provide overall support to the Regions basins, sub-basins and *woredas/communities* in supervising the implementation of the ESMF and RPF and coordinating with the relevant stakeholders involved in the Project.

The Specialists will contribute to the objectives of the Project which include:

- The preparation, together with the implementing entities, of annual work programs and budgets to fulfill ESMF requirements of subprojects;
- Monitoring project progress as it relates to compliance with the ESMF guidelines, resolving implementation bottlenecks, and ensuring overall that project implementation proceeds smoothly;
- Collecting and managing information relevant to the subproject environmental management works; and
- Ensuring that the implementing bodies are supported adequately and that they adhere to the principles of the project, specific to compliance with ESMF guidelines.

The Specialists should be hired on a fulltime basis and will be member of the PMU; s/he will also be responsible for execution of the Project on a daily basis.

## **11.3 Proposed Capacity Building Trainings**

For effective implementation of the LMP, SEP, ESMF, and RPF it is necessary to provide capacity building and technical backstopping to experts of different implementing agencies and stakeholders at federal, basin, sub-basin, *woreda* and community levels. Capacity building is critical in the implementation of IDRMP project activities and environmental and social safeguard works. Capacity building includes both human and material resources. Human resource capacity building enables implementers and stakeholders in basins *woredas* and cities/towns to equip with the understandings, skills and access to information, knowledge and to achieve the required objectives of IDRMP Environmental and Social risk management instrument documents. Trainings on Bank Environmental and Social Standards need to be conducted for these

stakeholders. In addition, environmental & social safeguard specialists will be equipped with the necessary office equipment.

Furthermore, technical backstopping and support at basin, sub-basin, *woreda*, city/town and community level will be established for the successful implementation of ESMP ESIA, RAP, and PMP and subsequent subproject level instruments. The technical backstopping includes training and capacity building need assessment, monitoring of the implementation of mitigation measures, utilization of the different steps of checklists, and others. This will be done on quarterly bases. The technical support and implementation of ESMF procedures will follow a detail plan and budget. The type of trainings, list of trainees and number of training days are explained below.

**Table 12: Proposed Capacity Building Training Scope and Schedules**

Types of Trainings	Target Groups	Estimated Participants	Training Topics/Aspects of Safeguard	Potential Trainers	Duration and Time of Training
ToT (federal level)	Staff of Federal level PMU/PCU	30	<ul style="list-style-type: none"> <li>• EA, ESIA</li> <li>• OHS</li> <li>• Environmental and social standards</li> <li>• Environmental policies of the World Bank and Ethiopia</li> <li>• ESMF, SA including social management plan and RPF implementation process</li> <li>• Monitoring of mitigation measures,</li> <li>• Review and reporting procedures,</li> <li>• Environmental and social auditing,</li> </ul>	<ul style="list-style-type: none"> <li>• Consultants</li> </ul>	1 week, before the planning period and Midterm period
ToT	Technical Staff of BDA, MoWE, EPLAU, MoUI	50	<ul style="list-style-type: none"> <li>• Integrated watershed and landscape management planning,</li> <li>• ESMP, ESIA, Environmental and social standards,</li> <li>• OHS</li> <li>• Environmental policies of the country</li> <li>• ESMF, SA including social management plan and RPF implementation process</li> <li>• Review and Reporting procedures</li> <li>• Implementation of mitigation measures</li> <li>• Grievance redress mechanism</li> <li>• Environmental and social auditing</li> </ul>	<ul style="list-style-type: none"> <li>• Consultants</li> </ul>	1 week, before the planning period and third year of the project lifecycle
ToT (Woreda level)	<ul style="list-style-type: none"> <li>• MoWE staff,</li> <li>• Woreda NRM experts</li> <li>• Water and energy office experts</li> <li>• Grassroots steering Committee members,</li> </ul>	25 + 5 from each sub-project woreda / city / town	<ul style="list-style-type: none"> <li>• Overall program objectives and activities,</li> <li>• EA, ESMP, ESIA, ESSs,</li> <li>• Environmental policies</li> <li>• ESMF, SA and RPF implementation process</li> <li>• OHS</li> <li>• Review and reporting procedures</li> <li>• Implementation of mitigation measures</li> <li>• Grievance redress mechanism</li> <li>• Environmental and social auditing</li> </ul>	<ul style="list-style-type: none"> <li>• RPCU Staffs,</li> <li>• MoWE experts</li> <li>• RBoEFCC experts</li> </ul>	1 week and before the planning period
Skill development (on environmental and social safeguard) training,	<ul style="list-style-type: none"> <li>• IDRMP Basin Office Steering Committee members,</li> <li>• Woreda/city/town/Keb ele cabinet members,</li> <li>• Communities</li> </ul>	25 + 5 from each sub-project woreda / city / town	<ul style="list-style-type: none"> <li>• Participatory planning</li> <li>• Project identification and screening</li> <li>• Use of appropriate tools and formats for screening</li> <li>• ESMF, SA, ESSs and RPF implementation</li> <li>• OHS</li> </ul>	<ul style="list-style-type: none"> <li>• Basin experts</li> <li>• Woreda NRM experts;</li> <li>• MoWE</li> </ul>	1 week before the planning period

Types of Trainings	Target Groups	Estimated Participants	Training Topics/Aspects of Safeguard	Potential Trainers	Duration and Time of Training
			<ul style="list-style-type: none"> <li>• Implementation of mitigation measures</li> <li>• Grievance redress mechanism</li> <li>• EA concepts</li> </ul>		
Awareness creation training/workshop	<ul style="list-style-type: none"> <li>• PMU members</li> <li>• Decision makers Basin level, <i>woreda</i>, city/town</li> </ul>	25 + 5 from each sub-project <i>woreda</i> / city / town	<ul style="list-style-type: none"> <li>• ESSs,</li> <li>• Environmental policies and guidelines</li> <li>• ESMF implementation and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Consultants</li> <li>• FTC members</li> </ul>	3 days before the planning period
Monitoring and evaluation training	<ul style="list-style-type: none"> <li>• Technical Staff of MoWE, PMU members</li> <li>• Basin level, <i>woreda</i>, city/town Steering Committee</li> </ul>	25 + 5 from each sub-project <i>woreda</i> / city / town	<ul style="list-style-type: none"> <li>• Monitoring and evaluation skills</li> <li>• Monitoring and evaluation guidelines</li> <li>• Participatory M &amp;E</li> <li>• OHS</li> </ul>	<ul style="list-style-type: none"> <li>• M &amp; E expert (consultant)</li> </ul>	Every period of year
Awareness creation training	<ul style="list-style-type: none"> <li>• Local Community members</li> </ul>	50 per sub-project	<ul style="list-style-type: none"> <li>• Participatory planning, Environmental and social issues, and monitoring of implementation</li> <li>• OHS</li> </ul>	<ul style="list-style-type: none"> <li>• Basin level, <i>woreda</i>, city/town experts</li> </ul>	3 days before the planning period
Exposure visits (abroad)	<ul style="list-style-type: none"> <li>• IDRM PMU, Basin office Steering Committee members</li> </ul>	25	<ul style="list-style-type: none"> <li>• Selected successful ESMP implementation projects in relevant countries</li> <li>• OHS</li> </ul>	-	Three times in the project lifecycle
Monitoring visits and supervision follow up by IDRM PMU, Basin office Steering Committee	<ul style="list-style-type: none"> <li>• Federal steering committee, Federal technical committee, Basin level, <i>woreda</i>, city/town Steering Committee</li> </ul>	10	<ul style="list-style-type: none"> <li>• Backstopping support on various issues to regional and <i>woreda</i> level experts</li> <li>• Field visits</li> <li>• OHS</li> </ul>	-	At least twice in the project lifecycle



#### **11.4 Technical Assistances**

For effective implementation of the ESMF, RPF and SA, technical assistance is required at federal, regional, basin, and *Woreda* and local levels and to build the capacity of the local communities, DAs, *Woreda*, and region government staff to discharge their responsibilities as per the requirements set out in this ESMF. To this effect, general technical assistance will be given to experts at federal, regional and basin, sub-basin levels. This assistance includes training on monitoring of the effective implementation of the mitigation measures set out in the ESMP, RAP, and PMP and in monitoring and supervision of the ESMF implementation that will be carried out on a bi-annual basis. Besides the general technical assistance, a specific training on the general environmental management principles tailored to lower technicians and to the community at the grass root level will be given.

The budget on specific and general technical assistance will be part of the subprojects budget and will not be included in budget earmarked to implement ESMF.

## 12 ESMF Implementation Budget

IDRMP is planned to be completed in 5 years. Budget required for the implementation of ESMF during the 5 years project life is indicated in the table below:

**Table 13: ESMF Implementation Budget (USD)**

No	List of ESMF Activities	Year 1	Year 2	Year 3	Year 4	Year 5
<b>1</b>	<b>Awareness Creation, Launching Workshop at Project Commencement</b>					
1.1	Awareness raising, launching workshop and ToT at federal level	10,000				
1.2	Awareness raising and ToT at basin level	40,000				
1.3	Awareness raising and ToT at <i>Woreda</i> level	60,000				
	<b>Subtotal</b>	<b>110,000</b>				
<b>2</b>	<b>Capacity Building Training</b>					
2.1	Federal	10,000		10,000		
2.2	Basin level	40,000		40,000		
2.3	<i>Woreda</i>	50,000		50,000		
	<b>Subtotal</b>	<b>100,000</b>		<b>100,000</b>		
<b>3</b>	<b>Environmental and Social Management Staffing</b>					
3.1	Salary of social and environmental safeguard specialists (4 experts, at PMU and PCU)	48,000	48,000	48,000	48,000	48,000
	<b>Subtotal</b>	<b>48,000</b>	<b>48,000</b>	<b>48,000</b>	<b>48,000</b>	<b>48,000</b>
<b>4</b>	<b>Training and Implementation SEP, GRM Implementation Process, GBV Risk Assessment, LMP and ESCP per Sub-project</b>					
4.1	Training and implementation of Stakeholders Engagement Plan per each sub-project	5,000	1,000	1,000	1,000	1,000
4.2	Training and implementation of GRM implementation process per each sub-project	5,000	1,000	1,000	1000	1,000
4.3	GBV risk assessment and implementation of associated management plans per each sub-project	5,000	1,000	1,000	1000	1,000
4.4	Training and implementation of labor management plans for each sub project	5000	1,000	1,000	1000	1,000
4.5	Supervision for the Implementation of environmental and social commitment Plans ( ESCPs per Subproject)	1000	1,000	1,000	1000	1,000
<b>5</b>	<b>Environmental and Social Instruments Preparation</b>					
5.1	ES instruments (ESIAs, P-ESIAs, RAPs, etc) preparation	100,000	100,000	100,000	100,000	100,000
	<b>Subtotal</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>
<b>6</b>	<b>Annual Review Workshops, Supervision, Monitoring, and Annual Audit</b>					
6.1	Federal level	10,000	10,000	10,000	10,000	10,000
6.2	Basin level	40,000	40,000	40,000	40,000	40,000
6.3	<i>Woreda</i> level	50,000	50,000	50,000	50,000	50,000
	<b>Subtotal</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>
	<b>Total</b>	<b>458,000</b>	<b>248,000</b>	<b>348,000</b>	<b>248,000</b>	<b>248,000</b>

Budget estimated for the implementation of ESMF for 5 years = **1,550,000 USD**. This is excluding environmental and social monitoring costs (included in the monitoring plan per sub-project basis) and other costs estimated per sub-project basis.



## References

1. Aide Memoire, Proposed Integrated Disaster Risk Management Project (IDRMP) (P176327), Virtual Preparation Meeting, August 30-September 15, 2021.
2. Awash Basin Authority. Awash River Basin Strategic Plan Main Report; Awash Basin Authority: Ethiopia, 2017.
3. Awash Basin Authority. 2017. Feasibility Study and Detail Design of Awash River Flood Protection and Control Project Volume – Xiii Socio-Economy Study Final Report. Addis Ababa, Ethiopia.
4. ECDSWC. 2017. Feasibility Study and Detail Design of Awash River Flood Protection and Control Project: Socio-Economy Study Final Report. Ethiopian Construction Design and Supervision Works Corporation. Addis Ababa
5. Eregata, G. T., Hailu, A., Memirie, S. T., & Norheim, O. F. (2019). Measuring progress towards universal health coverage: national and subnational analysis in Ethiopia. *BMJ global health*, 4(6), e001843.
6. International Development Association, Project Appraisal Document for ‘A Ethiopia Integrated Disaster Risk Management Project’, Project No. PAD4610.
7. Tufa, K. N. (2021). Review on Status, Opportunities and Challenges of Irrigation Practices in Awash River Basin, Ethiopia. *Agrotechnology*, 10, 207.
8. UNICEF (2019a). Situational Analysis of Children and Women: Afar Region.
9. UNICEF (2019b). Situational Analysis of Children and Women: SNNPR.
10. UNICEF (2019c). Situational Analysis of Children and Women: SNNPR.
11. Birhanu, B., Kebede, S., Charles, K., Taye, M., Atlaw, A., & Birhane, M. (2021). Impact of natural and anthropogenic stresses on surface and groundwater supply sources of the upper Awash sub-basin, central Ethiopia. *Frontiers in Earth Science*, 9, 321.
12. Halcrow Group Limited and Generation Integrated Rural Development (GIRD) Consultants. 2008. Rift Valley Lakes Basin Integrated Resources Development Master Plan Study: Part IA Main Report and Indicative Master Plan
13. Halcrow Group Limited and Generation Integrated Rural Development (GIRD) Consultants. 2008. Rift Valley Lakes Basin Integrated Resources Development Master Plan Study: Part II Sector Assessments
14. Richard Woodroffe and Associates. (1995) Omo-Gibe Basin Development Master Plan Study, Vol. II. Ministry of Water Resources. Addis Ababa.
15. One Wash National Program (OWNP). 2018. A Multi-Sectoral SWAP Review of Phase I

## Annexes

### Annex 1: Environmental and Social Screening Checklists

(Note: The screening forms shall be updated before project implementation)

This section outlines the selection criteria and associated environmental and social assessment procedures to be applied when screening sub-project activities under IDRMP.

#### Annex 1.1: Information for Screening Potential Safeguards Impacts

##### I. Basic Data

Name of the Project:

Name of the Proposed Project Activity or Sub-project:

Name of the Beneficiary:

Location:

Civil Works to be Constructed:

Proposed Date for Commencement of Work:

##### II. Site Description

Site Features	Description
Physical description of the site	
Presence and type of vegetation	
What is the current land use?	
Who identified the site?	
Who is the owner or user of the land?	
Who occupies the land?	

##### Completeness of the Application:

*Does the application document contain, as appropriate, the following information?*

Issues to be Considered	Yes	No	N/A
Description of the proposed sub-project and where it is located			
Reasons for proposing the project activity			
The estimated cost of implementation			
Information about how the site was chosen, and what alternatives were considered			
A map or drawing showing the location and boundary of the proposed project activity or sub-project including any land required temporarily during construction			
Any new access arrangements or changes to existing road layouts			
Any land that needs to be acquired, as well as who owns it, lives on it or has rights to use it			
A work program for construction, operation and decommissioning the physical works, as well as any site restoration needed afterwards			
Construction methods			

Issues to be Considered	Yes	No	N/A
Resources to be used in construction and operation (e.g. materials, water, energy)			
Information about measures included in the proposed project activity or sub-project plan to avoid or minimize adverse environmental and social impacts			
Details of any permits required for the proposed project activity or sub-project			

## Annex 1.2: Exclusion/Eligibility Criteria for Sub-projects

The following types of activities as ineligible for financing under the Project:

- Activities that may cause damage to cultural heritage.
- Activities that involve removal or conversion of forests and other natural resources.
- Activities that may cause long term, permanent and/or irreversible (e.g. loss of major natural habitats including habitats of wildlife and fisheries)
- Activities that may cause any significant loss of biodiversity.
- Activities that have a high probability of causing serious adverse effects to human health and/or the environment.
- Activities that may have significant adverse social impacts and/ or may give rise to significant social conflict.
- Activities that involve land use changes such as drainage of wetlands and cultivation.
- Activities that may potentially affect the quality or quantity of water or a waterway shared with other nations.
- Activities that may involve significant land acquisition, forced eviction and involuntary physical displacement.
- Activities that would disproportionately affect the historically underserved and vulnerable groups.
- Activities that may impact on known cultural heritage sites including sites that are important to local communities.
- In sum activities that may cause large-scale physical disturbance on wildlife habitat; block the access to or use of water points etc. used by others; located in or adjacent to protected area, ; significant impact on cultural heritage; create encroachment and/or cause significant adverse impacts to critical natural habitats (e.g., wildlife reserves; parks or sanctuaries; protected areas; forests and forest reserves, wetlands, national parks or game reserve; any other ecologically/environmentally sensitive areas) and contravene international and regional conventions on environmental and social issues are not eligible for the project financing

## Annex 1.3. Screening Checklist for Environmental and Social Concerns Needing Special attention

Name of the Program:

Name of the Sub-project:

Location of the subproject: Region: \_\_\_\_\_ Zone: \_\_\_\_\_ Woreda: \_\_\_\_\_

Kebele: \_\_\_\_\_

Person(s) who did the eligibility checklist

1. Name
2. Organization
3. Signature
4. Date

**A. Environmental and Social Concern of the Proposed Sub-project or Activity**

Feature of Environmental and Social Concern: Will the Sub-project	Yes	No	Comments
Involves land acquisition, or loss of assets, or access to assets on the land			
Have hazardous wastes, disposal, and pollution issues			
Displace individuals, families, or businesses			
Encroach any sensitive area, like wetlands, national parks			
Located in or near an area where there is an important historical, archaeological or cultural heritage site			
Have risk of causing the contamination of drinking water			

If the proposed project activity or sub-project have any of the above features ('Yes' answers), the concerned focal person/experts in collaboration with those concerned notifies the Regional and *Woreda* Environmental offices to make sure that the necessary procedures and guidelines are followed and relevant documents prepared. In addition, the proposed project activities have to be screened for any potential environmental and social concern as per the checklist given below.

**Recommendations**

Proposed project activity or sub-project needs special attention:

☐

Proposed project activity or sub-project does not need special attention:

☐

**Additional comments**

Screening supervised and approved by:

Name \_\_\_\_\_ Position \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_  
1 \_\_\_\_\_

**B. Checklist for Environmental and Social Impact Rating for Proposed Project Activities or Sub-projects of Environmental and Social Concerns**

Impact rating will be considered both in terms of consequence of impacts and probability of impacts so as to avoid subjective impact analysis.

A	General - Will the Proposed Project Activity or Sub-project:	If Yes, Rate of Impacts				
		None	Low	Medium	High	Unknown
1	Located within or nearby environmentally sensitive areas (intact natural habitats, critical habitats, wetlands) or threatened/endangered species?					
2	Located in or near an area where there is an important historical, archaeological or cultural heritage site?					
3	Located within or adjacent to any areas that are or may be protected by government (such as national parks, national reserves, world heritage sites) or local traditional sites?					
B	Environment – Will the Proposed Project Activity or Sub-project:	If Yes, Rate of Impacts				
		None	Low	Medium	High	Unknown

4	Has noise and vibration impact on wildlife?					
5	Has impact on air quality or result in ambient air pollution?					
6	Has impact due to borrow pits and quarry sites?					
7	Has impact due to construction waste?					
8	Has impact due to solid waste?					
9	Has impact due to hazardous waste?					
10	Has impact on soil quality?					
11	Has impact on surface water resources?					
12	Has impacts due to channel smoothening and clearing riverine vegetation?					
13	Has impact due to disposal of dredging spoils?					
14	Has impact on flora?					
15	Has impact on fauna?					
16	Has impact on genetic resources?					
17	Use energy resource?					
18	Use water resources?					
19	Has impact on the river regime and aquatic habitat?					
20	Has impact on groundwater resource?					
21	Has impacts due to reduced or eliminated floodplains?					
22	Has impacts due to river channel modifications?					
23	Has impacts due to paving of river channels?					
24	Has impact due to increased flood risks downstream?					
25	Has impact on water (surface and/or groundwater) quantity and quality (including drinking water)?					
C	<b>Social – Will the Proposed Project Activity or Sub-project:</b>	<b>If Yes, Rate of Impacts</b>				
		<b>None</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Unknown</b>
26	Require that land (public or private) be acquired (temporarily or permanently) for its development?					
27	Use land that is currently occupied or regularly used for productive purposes (such as gardening, farming, pasture, fishing locations, forests)					
28	Displace individuals, families or businesses?					



29	Result in the temporary or permanent loss of crops, pasture, fruit trees, or household infrastructure such as granaries, outside toilets and kitchens?					
30	Result in loss of housing structures?					
31	Result in damage and interruption of infrastructure and/or utilities?					
32	Result in the involuntary restriction of access by people to legally designated parks and protected areas?					
33	Cause poor water drainage and increase the risk of water-related diseases such as malaria, waterborne diseases, bilharzias, etc?					
34	Restrict traditional water uses?					
35	Create noise disturbance					
36	Has occupational health and safety risks?					
37	Has community health and safety risks?					
38	Increase risk of infectious and communicable diseases (such as HIV/AIDS, other STDs, and COVID-19)?					
39	Create an environment for SEA/SH, affecting both target community members?					
40	Has risk of workers exposure to GBV?					
41	Has a risk of using or encouraging child labor?					
42	Can it exacerbate conflict between refugees and host communities?					
43	Has a risk of excluding elderly, people with disabilities, and other vulnerable groups?					
44	Has an impact on SSAHUTLC?					
45	Has risks due to camp sites?					
46	Has a risk of social tension and conflicts?					
47	Has risk due to security?					
48	Result in labor influx and associated risks?					
49	Has risk of operational concerns due to remoteness and insecurity?					

When considering the location of a proposed project activity or sub-project, rate the sensitivity of the proposed site is as shown in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or high social planning may be required to adequately avoid, mitigate or manage potential effects. The following table should be used as a reference.

### Summary of Site Sensitivity

Issues	Site Sensitivity		
	Low	Medium	High
Sensitive natural habitats (wetland, national parks)	No natural habitats present of any kind, no critical hot spot biodiversity area, fragile ecosystem	No critical natural habitats; other natural habitats occur	Presence of critical natural habitats, presence of hot spot biodiversity area, fragile ecosystem with in declared protected area
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Medium intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/ flood risks	Medium slopes; some erosion potential; medium risks from volcanic/seismic/flood	Mountainous terrain; steep slopes; unstable soils; high erosion potential; volcanic, seismic or flood risks
Cultural property, Physical cultural resources	No known or suspected cultural heritage sites	Suspected cultural heritage sites; known heritage sites in broader area of influence	Known heritage sites in project area
Involuntary resettlement	No economic or physical displacement	If it results low to moderate adverse impacts on PAPs and their livelihoods	If it results in significant adverse impacts on PAPs and their livelihoods
Land acquisition	No land acquisition	If the activity takes less than 20% of households land	If the activity takes more than 20% of households land
Indigenous peoples	No indigenous population	Dispersed and mixed indigenous population, highly acculturated indigenous population	Indigenous territories, reserves, and/or lands, vulnerable indigenous population

### Summary of Assessment (based on field visit):

### Environmental Risk of the proposed project as per the ESF:

### Recommendation

- ☐ The proposed project activity or sub-project can be considered for approval. The application is complete, all significant environmental and social issues are resolved, and no further planning of proposed project activity or sub-project is required: **Approved without condition** (*Project activity or sub-project is not of environmental and social concern and is ready for approved*)

- ☐ Safeguards instrument(s) required: Full ESIA, Partial ESIA, RAP, or others (please specify)
- ☐ ESMP required
- ☐ Rejected; reasons for rejection:
- ☐ Others (specify):
- ☐ A field appraisal is required.

### ***Certification***

I/We certify that I/we have thoroughly examined all the potential adverse effects of these project activity or sub-project. To the best of our knowledge, the proposed project activity or sub-project as described in the application and associated planning reports (e.g. ESIA, ESMP, RAP,), if any, will be adequate to avoid or minimize all adverse environmental and social impacts.

A Field Appraisal report will be completed and added to the file.

*Name of desk appraisal officer (print):* .....

*Signature:* ..... *Date:* .....

*Woreda Environmental offices representative*

*Name:* .....

*Position:* .....

*Signature:* .....

*Date:* .....

*Desk Appraisal by Review Authority:* .....

**Note:** A field appraisal must be carried out if the proposed project activity or sub-project:

- Needs to acquire land, or an individual or community's access to land or available resources is restricted or lost, or any individual or family is displaced;
- May restrict the use of resources in a park or protected area by people living inside or outside of it;
- May affect a protected area or a critical natural habitat;
- May encroach onto an important natural habitat, or have an impact on ecologically sensitive ecosystems (e.g. rivers, streams, wetlands);
- May adversely affect or benefit an underserved and vulnerable people;
- Involves or introduces the use of pesticides;
- Involves, or results in: a) surface water modification; b) groundwater modification; c) production of waste (e.g. construction waste, solid waste, hazardous waste); d) in risk of flooding downstream; or e) eliminates floodplains; and,
- Any others to be clarified/checked at the proposed sub-project (please mention them).

## Annex 2: Proposed Environmental and Social Field Appraisal Form

(Note – This field appraisal form shall be updated before project implementation)

Name of the Project:

Name of the Proposed Project Activity or Sub-project:

Application Number:

### ***Part 1: Identification***

1. Name: .....

2. Location: .....

3. Reason for Field Appraisal:

4. Date(s) of Field Appraisal:

5. Field Appraisal Officer and Address:

6. Extension Team Representative and Address:

7. Community Representative and Address:

### ***Part 2: Description of the Proposed Project Activity or Sub-project***

8. Details:

---

---

### ***Part 3: Environmental and Social issues***

9. Will the proposed project activity or sub-project occupy land?

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| • Need to acquire land?  | <input type="checkbox"/> | <input type="checkbox"/> |
| • Affect an individual or the community's access to land or available resources? | <input type="checkbox"/> | <input type="checkbox"/> |
| • Displace or result in the involuntary resettlement of an individual or family? | <input type="checkbox"/> | <input type="checkbox"/> |

If "Yes", tick one of the following boxes:

- The Resettlement Action Plan (RAP) included in the allocation is adequate. No further action required.
- The RAP included in the application must be improved before the application can be considered further.
- An RAP must be prepared and approved before the application can be considered further.

10. Will the subproject:

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| • Encroach onto an important natural habitat?          | <input type="checkbox"/> | <input type="checkbox"/> |
| • Negatively affect ecologically sensitive ecosystems? | <input type="checkbox"/> | <input type="checkbox"/> |

If "Yes", tick one of the following boxes:

- The ES instrument included in the application is adequate. No further action required.
- The ES instrument included in the application must be improved before the application can be considered further.
- An ES instrument must be prepared and approved before the application can be considered further.

11. Will this proposed project activity involve or result in:

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| • Modification of surface water and groundwater? | <input type="checkbox"/> | <input type="checkbox"/> |
| • Production of wastes?                          | <input type="checkbox"/> | <input type="checkbox"/> |
| • Rebuilt drainage systems?                      | <input type="checkbox"/> | <input type="checkbox"/> |

If "Yes", tick one of the following boxes:

- The application describes suitable measures for managing the potential adverse environmental effects of these activities. No further action required.
- The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An ES instrument must be prepared and approved before the application is considered further.

12. Will this proposed project activity or sub-project has risk of flooding downstream?      Yes      No  
☐      ☐

If "Yes", tick one of the following boxes:

- The application demonstrates that flood control measures including embankment or micro-dam safety measures has been prepared by a competent engineer, the embankment or micro-dam is safe, and no remedial work is required. No further action is required.
- The application does not demonstrate that flood control measures including embankment or micro-dam safety measures has been prepared by a competent engineer, the embankment or micro-dam is safe, and no remedial work is required. Embankment or micro-dam safety measures must be prepared by a competent engineer and approved before the application is considered further.

13. Are there any other environmental or social issues that have not been adequately addressed?  
Yes      ☐      No      ☐

If "Yes", summarize them:

And tick one of the following boxes:

- Before it is considered further, the application needs to be amended to include suitable measures for addressing these environmental or social issues.
- An ES instrument needs to be prepared and approved before the application is considered further.

#### ***Part 4: Field Appraisal Decision***

- The proposed project activity or sub-project can be considered for approval. Based on a site visit and consultations with both interested and affected parties, the field appraisal determined that the community and its proposed project adequately address environmental and/or social issues as required by the ESMF.
- If the field appraisal identifies environmental and/or social issues have not been adequately addressed, then recommendation will be made to amend the application.
- All required documentation such as an amended application, ESIA, ESMP, RAP, will be added to the proposed project activity file for further consideration.

***Name of field appraisal officer (print):*** .....

***Signature:*** ..... ***Date:*** .....

## Annex 3: Guideline for the Preparation of Site Specific ESMP

(Note – This guideline shall be updated before project implementation)

ESMPs should demonstrate that proposed environmental and social management and monitoring activities will encompass all major impacts and how they will be integrated into supervision. The ESMP should also describe proposed measures, methods, and actions to facilitate public consultation. It is important that the ESMP identify linkages to other social and environmental safeguards plans relating to the proposed project activities such as plans dealing with resettlement issues. ESMPs should be finalized and approved after taking into account comments from *Woreda* Environmental offices. The WB safeguards team will review and provide comments on draft site-specific instruments (if required) and monitor the safeguards compliance. Given below are the important elements that constitute an ESMP:

- i) **Description of the Sub-project:** Scale nature and type of proposed project activity implemented under the proposed programs are summarized.
- ii) **Description of Proposed Project Area:** The Biophysical and social environmental setting of the specific Proposed project activity are summarized
- iii) **Impacts:** Predicted adverse environmental and social impacts (and any uncertainties about their effects) for which mitigation is necessary should be identified and summarized.
- iv) **Description of Mitigation Measures:** Each measure should be briefly described in relation to the impact(s) and conditions under which it is required. These should be accompanied by and/or referenced to designs, development activities, operating procedures, and implementation responsibilities. Proposed measures and actions to facilitate public consultations should be clearly described and justified. Feasible and cost-effective measures to minimize adverse impacts to acceptable levels should be specified with reference to each impact identified. Further, the ESMP should provide details on the conditions under which the mitigation measure should be implemented. The ESMP should also indicate the various practicable measures applicable to the proposed project activity at each project phases (design, construction and/or operation). Efforts should also be made to mainstream environmental aspects wherever possible.
- v) **Description of Monitoring Program:** The ESMP identifies monitoring objectives and specifies the type of monitoring required; it also describes performance indicators which provide linkages between impacts and mitigation measures identified in the ESA report, parameters to be measured (for example: national standards, extent of impacted area to be considered, etc.), methods to be used, sampling location and frequency of measurements, and definition of thresholds to signal the need for corrective actions. Monitoring and supervision arrangements should be agreed by World Bank and the client to ensure timely detection of conditions requiring remedial measures in keeping with best practice; provide information and the progress and results of mitigation and institutional strengthening measures; and, assess compliance with National and WB environmental safeguard policies
- vi) **Institutional Arrangements:** Institutions responsible for implementing mitigation measures and for monitoring their performance should be clearly identified. Where necessary, mechanisms for institutional coordination should be identified, as often, monitoring tends to involve more than one institution. This is especially important for requiring cross-sectoral integration. In particular, the ESMP specifies who is responsible for undertaking the mitigation and monitoring measures, e.g., for enforcement of remedial actions, monitoring of implementation, training, financing, and reporting. Institutional arrangements should also be crafted to maintain support for agreed enforcement measures for environmental protection. Where necessary, the ESMP should propose strengthening the relevant agencies through such actions as establishment of appropriate organizational arrangements; appointment of key staff and consultants.
- vii) **Implementing Schedules:** The timing, frequency and duration of mitigation measures and monitoring should be included in an implementation schedule, showing phasing and coordination with procedures in the overall implementation/operations manual. Linkages should be specified where implementation of mitigation measures is tied to institutional strengthening and to the legal agreements.

- viii) **Reporting Procedures:** Feedback mechanisms to inform the relevant parties on the progress and effectiveness of the mitigation measures and monitoring itself should be specified. Guidelines on the type of information required and the presentation of feedback information should also be highlighted.
- ix) **Cost Estimates and Sources of Funds:** Implementation of mitigation measures mentioned in the ESMP will involve an initial investment cost as well as recurrent costs. The ESMP should include cost estimates into the design, bidding and contract documents to ensure that the contractors will comply with the mitigation measures. The costs for implementing the ESMP will be included in the design, as well as in the bidding and contract documents. It is important to capture all costs – including administrative, design and consultancy, and operational and maintenance costs – resulting from meeting required standards or modifying design.

For each potential impacts of the proposed project activity or sub-project, corresponding mitigation measures, and who is responsible for implementation is indicated. For each potential environmental and social impact, there can be more than one mitigation measure. Responsibility for implementation of mitigation measures will typically rest with the contractor or beneficiary during construction and operation of the proposed activity or sub-project.

The monitoring section of the ESMP prescribes indicators for monitoring the environmental and social impact and the effects of mitigation measures. The responsibility for this will typically rest with the BDA in collaboration with the respective pertinent institutions. A template for ESMP is depicted in Annex 4.

## Annex 4: Environmental and Social Management Plan (ESMP) Template

Name of Sub Project					
Region		Zone		Woreda	
Kebele/community		Location GPS coordinates			

<i>Description of the proposed project activity or sub-project</i>
<i>Description of potential environmental and social impacts;</i>
<i>Description of planned mitigation measures and monitoring along with institutional responsibilities and capacity/training requirements</i>

Environmental and Social Management Plan - Mitigation					
Project Phase	Project Activity	Environmental Impacts	Mitigation/ Enhancement Measures	Institutional Responsibilities	Cost
Pre-construction					
Construction					
Operation and maintenance					
<b>Total Mitigation Costs</b>					

Environmental and Social Management Plan - Monitoring							
Project Phase	Mitigation Measures	Parameters to be Monitored	Location	Measurements	Frequency	Institutional Responsibilities	Cost
Pre-construction							
Construction							
Operation and maintenance							
<b>Total Monitoring Costs</b>							



## **Annex 5: Procedures for Chance Finds of Physical Cultural Resources**

Any proposed project activity or sub-project within the scope of the project, that will impact the cultural resources are not eligible for funding (Refer to Annex 1). In case of any possibility of chance find of physical cultural resources, most notably during excavation as part of construction activity the contractor should report to the responsible institutions for further guidance.

Such physical cultural resources may take the form of work of art, building structures, graves or other sites of importance, including sites of archaeological, historical or religious significance.

All chance finds of such physical cultural resources will lead to temporary suspension of all activity that will adversely impact the cultural resource. Contractors will include detailed procedures for ensuring the protection of the cultural resources, including cessation of activities until the significance of the find has been determined and until appropriate mitigating measures has been implemented. This Annex contains standard provisions to be annexed to contracts that potentially will lead to chance finds of physical cultural resources, as required.

The attachments outlined below will be annexed to the contract in case there is the possibility of chance find of physical cultural resources.

### ***Attachment to contracts in case of potential chance finds of physical cultural resources***

If the Contractor discovers archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

- 1: Excavation in sites of known archaeological interest should be avoided as stated in Annex 1 since, such project activities are not eligible for funding. Where historical remains, antiquity or any other object of cultural, historical or archaeological importance (including graveyards) are unexpectedly discovered during construction in an area not previously known for its archaeological interest, the following procedures should be applied:
  - a) Stop the construction activities in the area of the chance find.
  - b) Delineate the discovered area.
  - c) Secure the area to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible regional authorities and the Ministry of Culture and Sport (MoCS) to takeover.
  - d) Notify to World Bank and the respective relevant institutions to contact the responsible local authorities and the Ministry of Culture and Sport immediately (less than 24 hours).
  - e) The Ministry of Culture and Sport will be in charge of protecting and preserving the area until deciding on the proper procedures to be carried out. This might require an evaluation of the findings to be performed by the archaeologists of the relevant Ministry Culture and Sport (within 1 week). The evaluation of the findings will take in consideration various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values as decided by the Ministry of Culture and Sport.
  - f) Decisions on how to handle the finding are taken by the responsible authorities and the Ministry of Culture and Sport (within 2 weeks). This could include changes in the location of the proposed project activity or sub-project layout (such as when the finding is irremovable remains of cultural or archaeological importance), conservation, preservation, restoration and salvage.
  - g) Construction or rehabilitation work will resume only after authorization is provided by the responsible local authorities and the Ministry of Culture and Sport concerning the safeguard of the heritage.
  - h) Authorization to resume work shall be communicated to the contractor in writing by the Ministry of Culture and Sport.

- 2: In case of delays incurred indirect relation to any physical cultural resources findings not stipulated in the contract (and affecting the overall schedule of works), the contractor/masons may apply for an extension of time. However, the contractor/masons will not be entitled to any kind of compensation or claim other than what is directly related to the execution of the physical cultural resources findings works and protections.

## **Annex 6: Guidelines for Annual Reviews**

### ***Objectives:***

The objectives of annual reviews of ESMF implementation are two-fold:

- a) To assess the program performance in complying with ESMF procedures, learn lessons, and improve future performance; and,
- b) To assess the occurrence of, and potential for, cumulative impacts of the proposed project activities

The program management is expected to use the annual reviews to improve on procedures and capacity for integrating natural resources and environmental/social management into proposed program operations.

### ***Scope of Work:***

#### ***ESMF Performance Assessment***

The overall scope of the performance assessment work is to:

- a) Assess the adequacy of the process and procedures based on interviews with Project participants, Project records, and the environmental and social performance of a sample of approved project activities;
- b) Assess the adequacy of ESMF roles and responsibilities, procedures, forms, information resource materials, etc.;
- c) Assess the needs for further training and capacity building;
- d) Identify key risks to the environmental and social sustainability of the proposed project activities; and,
- e) Recommend appropriate measures for improving ESMF performance.

The following tasks will be typical:

- a) Review national, regional and *Woreda* records of proposed project preparation and approval (e.g. applications; management in the region and *Woreda*; screening checklists; ESIA's, RAPs, ESMPs, appraisal forms; approval documents), as well as related studies or reports on wider issues of natural resources and environmental management in the country;
- b) On the basis of this review, conduct field visits to assess the completeness of planning and implementation work, the adequacy of environmental/social design, and compliance with proposed mitigation measures. The sample should be large enough to be representative and include a substantial proportion that had (or should have had) a field appraisal according to established ESMF criteria. Proposed project activities in sensitive natural or social environments should especially be included;
- c) Interview national, regional and *Woreda* officials responsible for appraisal and approval to determine their experience with ESMF implementation, their views on the strengths and weaknesses of the ESMF process, and what should be done to improve performance. Improvements may concern, for example, the process itself, the available tools (e.g. guidelines, forms, information sheets), the extent and kind of training available, and the amount of financial resources available; and,
- d) Develop recommendations for improving ESMF performance.

#### ***Cumulative Impacts Assessment***

This part of the annual review assesses the actual or potential cumulative impacts of proposed project activity with other development initiatives on the environment, natural resources and community groups, if applicable. Cumulative impacts result from a number of individual small-scale activities or sub-projects that, on their own, have minimal impacts, but over time and in combination generate a significant impact. For example:

- a) Change in hydrodynamics and hydrochemistry of floodplains, surface water, and groundwater resources due to introduction of flood control structures
- b) Decline in aquatic and riverine ecosystems and habitats through introduction of flood control structures
- c) Change in the livelihood of local communities residing in the project influence areas

- d) Overwhelmed or illegal waste and dumping sites due to the inappropriate disposal of increasing amounts of wastes including dredging spoils.

The function of this assessment is primarily as an "early warning" system for potential cumulative impacts that might otherwise go undetected and unattended to. It will be largely based on the observations of people interviewed during the fieldwork, and trends that may be noticed by regional or *Woreda* officials. Where cumulative impacts are detected or suspected, recommendations will be made to address the issue, perhaps through more detailed study to clarify matters and what should or can be done about them.

### ***Qualifications for Undertaking Annual Reviews:***

The annual reviews shall be undertaken by an individual or small team, with experience relevant to the likely issues to be encountered (e.g. environmental and natural resources management, land acquisition and resettlement, livelihood restoration). They should also be familiar with the methods and practices of effective community consultation, and with typical methods and processes for preparing, appraising, approving and implementing small-scale community development projects.

### ***Timing:***

Annual reviews should be undertaken after the annual ESMF report has been prepared and before World Bank supervision of the Project, at the closing of each year of the programs. It is expected that each review would require 3 to 4 weeks of work and that the review report would be completed within 2 weeks of completing the fieldwork.

### ***Outputs:***

The principal output is an annual review report that documents the review methodology, summarizes the results, and provides practical recommendations. Distinct sections should address;

- a) ESMF performance;
- b) Cumulative impacts; and,
- c) Measures to be taken.

Annexes should provide the detailed results of the fieldwork, and summarize the number of approved proposed project activities and their characteristics according to the annual report format.

Copies of the annual review report should be delivered to the project management, to each national and regional office responsible for appraisal, approval and implementation of the proposed project activities, and to the World Bank. The project management (national or regional) may also want to host national or regional workshops to review and discuss the review findings and recommendations.

## Annex 7: Proposed Form for ESMF Reporting, Training and Follow-up

(Note – The ESMF reporting template shall be updated at the start of project implementation.)

This annex contains three templates to be used in conjunction with monitoring and reporting and follow for ESMF implementation.

### *ESMF Reporting Form*

Title of the Proposed Sub-project Activity	Application Received (Date)	Screening Done (Date)	Field Appraisal undertaken (Date if undertaken)	Application Approved (Date if approved)	ESMP, ESIA, RAP Developed (Yes/No)	Written Warnings of Violation of ESMP Issued (Yes/No)	Chance Find Procedures Invoked (Yes/No)
Personnel		No. of People Trained		Training Received			
Safeguard specialist/officer							
Zonal focal points							
Woreda staff							
Community members etc.							

### *Follow up on Previous Recommendations*

Recommendation	Date of Recommendation	Action Taken	Recommendation Implemented (Yes/No)

## Annex 8: Sample Terms of Reference (ToR) for ESIA Preparation

(Note – The ToR shall be updated at the start of project implementation.)

Based on the screening and scoping results, ESIA terms of reference will be prepared. The terms of reference will have the following contents. *Please refer to the Guideline Series Documents for Reviewing Environmental Impacts Study Reports (EPA, 2003) for detail information on contents and descriptions of ESIA report (EPA, 2003).*

**I. Objective of the ToR:** This section should state the scope of the ESIA in relation to the screening category and the proposed program activities. It needs to stipulate the process and the timing of the ESIA preparation and implementation stages in order to adequately address the safeguards requirements of the GoE and the World Bank.

**II. Introduction and Context:** The ToR needs to provide information on program activity objective, the name of the program activity proponent, the rationale for conducting the ESIA, specific components of the program activity, program activity area with location map, short briefing of social and environment of settings and applicable national and international safeguard policies.

**III. Location of the study area and likely major impacts:** State the area involved and the boundaries of the study area for the assessment. Identify adjacent or remote areas which should be considered with respect to impacts of particular aspects of the project activity.

**IV. Mission/Tasks:** The ESIA study team/consultant should clearly execute the following tasks.

**Task A: Description of the proposed program activity:** Describe the location, size and nature of the program activity, environmental assessment category, brief description of program activity alternatives, time schedule for phasing of development (i.e., preconstruction, construction, operation/maintenance, decommissioning), and resources (finance, human, material and technology) required for the program activity, among others.

**Task B: Baseline information/Biophysical and social-economic description:** Describe the baseline/biophysical and socio-economic characteristics of the environment where the program activity will be implemented; and area of influence. Include information on any changes anticipated before the program activity commences.

**Task C: Administrative and legal Policy framework:** In addition to the required administrative and institutional setup for the implementation of the program activity, this part needs to identify pertinent policies, regulations and guidelines pertinent to the study that include:

- ✓ National laws and/or regulations on environmental and social assessments;
- ✓ Regional environmental and social assessment regulations;
- ✓ Environmental and social assessment regulations of any other financing organizations involved in the program activity;
- ✓ Relevant international environmental and social agreements/conventions to which
- ✓ Ethiopia is a party; and,

✓ World Bank safeguards policies.

**Task D: Identification of potential impacts of the program activity:** Identify all potential significant impacts that the program activity is likely to generate. Assess the impacts from changes brought about by the program activity on baseline environmental conditions as described under Task B. The analysis should address both the positive and negative impacts of the program activity. Wherever possible, describe impacts quantitatively, in terms of environmental and social costs and benefits.

**Task E: Propose Program activity alternatives:** Alternatives extend to site, design, technology selection, construction techniques and phasing, and operating and maintenance procedures. Compare alternatives in terms of potential environmental and social impacts; capital and operating costs; suitability under local conditions; and institutional, training, and monitoring requirements.

**Task F: Preparation of an Environmental and Social Management Plan (ESMP):** Describe the mitigation measures for adverse environmental and social impacts, staffing/institutional and training requirements, schedules, and other necessary support services to implement the mitigating measures. Provide environmental and social protection clauses for application by contractors and consultants, if any. The ToR should state that the concerned and affected parties should agree on the proposed mitigating measures before they are included in the ESMP.

**Task G: Monitoring Plan:** This organizes a comprehensive plan to monitor the implementation of mitigating measures and the impacts of the program activities. It should also address an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to implement the plan.

**V. Qualification of the ESIA study team/Consultant:** The ToR should provide clear guidance on the qualification of the ESIA study team.

**VI. Duration of the ESIA Study:** This should be determined according to the type of the program activity.

**VII. Preparation of the final Report:** The ESIA study team/consultant will produce the final report one week after receiving comments from program activity proponent and concerned stakeholders. The final report will include comments from these institutions.

**VIII. Suggested Contents of the ESIA Report:** Please refer to the “Guideline Series Documents for Reviewing Environmental Impacts Study Reports” (EPA, 2003) to get detail information on the contents of ESIA report (EPA, 2003). The contents of the ESIA report should contain the following elements.

- Executive Summary;
- Introduction;
- Methodology;
- Administrative, legal and policy requirements;
- Description of program activity (need, objectives, technical details, size, location input and other relevant requirements);

- An outline of the main development alternatives;
- Description of baseline information/environmental and socio-economic conditions;
- An account of the prediction and assessment of each impact at all stages of the program activity cycle for each alternative;
- Description of the methodology and techniques used in assessment and analysis of the program activity impacts;
- Description of environmental and social impacts for program activity;
- Environmental and Social Management Plan (ESMP) for the project including the proposed mitigation measures;
- Institutional responsibilities for monitoring and implementation; Summarized table for ESMP;
- Conclusions and recommendations;
- References; and,
- Annexes:
  - ✓ List of Persons/Institutions met;
  - ✓ List of the ESIA study team members; and,
  - ✓ Minutes of consultations.



## Annex 9: Proposed Grievance Redress Mechanism

World Bank has introduced a Grievance Redress Service (GRS) requiring the Borrower to provide a grievance mechanism, process, or procedure to receive and facilitate resolution of stakeholders' concerns and grievances arising in connection with the project and the Borrower's environmental and social performance.

According to the GRS project-affected communities and individuals may submit complaints regarding World Bank financed project to the appropriate local grievance mechanism, or the World Bank corporate Grievance Redress Service (GRS).

The table depicted below shows a generic grievance redress mechanism that can be applied to the proposed project activities.

Steps	Process	Description	Time frame	Other information
1	Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction;	1 Day	Email address; hotline number
2	Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	4-7 Days	Significance criteria Level 1 – one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions
3	Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	
4	Development of response	<ul style="list-style-type: none"> <li>Grievance assigned to appropriate party for resolution</li> <li>Response development with input from management/ relevant stakeholders</li> </ul>	4-7 Days 10-14 Days	
5	Response	Redress action approved at appropriate	4-7	Senior

	signed off	levels	Days	management staff of BDA should sign
6	Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days	
7	Complaints Response	Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	
8	Close grievance	Record final sign off of grievance. If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law	4-7 Days	Final signoff by Senior management of BDA

## **Annex 10: Environment, Occupational and Community Health & Safety Specifications in Relation to Construction and Decommissioning**

(Note – These specifications are provided as guideline or are indicative and shall be further developed updated before sub-projects implementation according to the specific needs of the sub-projects.)

### **Construction and Decommissioning**

The general guidelines section on Environment, Occupational Health & Safety and Community Health & Safety in relation to Construction and Decommissioning are relevant to this project.

### **Impact of Dust Generated from Construction Sites**

To arrest dust generated from the construction sites the following measures should be taken.

- Use binding agents on roadways such as molasses on the exposed stockpiles using a sprinkler system or a “water-mist cannon”;
- Vegetate surfaces of stockpiled materials;
- Similarly, Combustion by-products are emitted by vehicles and other combustion sources installed in the quarrying site. Pollution prevention and control measures to address these impacts are addressed in the General EHS Guidelines.

Toxic and non-toxic gases are normal byproducts generated by blasting activities, regardless of the explosive materials used. Emissions of NO<sub>2</sub>, CO, and NO are generated during the explosions.

The following pollution prevention and control techniques are recommended:

- Alternatives to blasting, such as hydraulic hammers or other mechanical methods;
- If blasting is necessary, planning of the blasting (arrangement, diameter, and depth and direction of blast holes) should be implemented;
- The correct burning of the explosive, typically composed of a mixture of ammonium nitrate and fuel oil, should be ensured by minimizing the presence of excess water and avoiding incorrect or incomplete mixing of explosive ingredients.

### **Noise and Vibrations**

#### **Noise**

Noise emissions are commonly associated with all extraction activities, including construction material and dimension stone quarrying. Noise is produced during all phases of exploitation and processing (e.g. shoveling, ripping, blasting, cutting, transport, crushing, grinding, sizing, and stockpiling). The main noise sources are associated with drilling, breaking, crushing and handling, moving, screening, and transport.

For noise emissions, the recommended minimization and control techniques include the following:

- Reduction of noise from construction machineries;

- Implementation of enclosure and cladding of processing plants;
- Installation of proper sound barriers and (or) noise containments, with enclosures and curtains at or near the source equipment (e.g. crushers, grinders, and screens);
- Use of rubber-lined or soundproof surfaces on processing equipment (e.g. screens, chutes, transfer points, and buckets);
- Use of rubber-belt transport and conveyors;
- Installation of natural barriers at facility boundaries (e.g. vegetation curtains or soil berms);
- Optimization of internal-traffic routing, particularly to minimize vehicle-reversing needs (reducing noise from reversing alarms) and to maximize distances to the closest sensitive receptors;
- The use of electrically driven machines should be considered;
- A speed limit for trucks should be considered;
- Construction of berms for visual and noise screening.

### **Vibrations**

The most significant vibration emissions are usually associated with blasting activities, whereas minor emissions are commonly associated with use of rock hammers. For blasting-related emissions (e.g. vibration, overpressure, fly rock), the following control and minimization techniques are recommended:

- Use of specific blasting plans; correct charging procedures and blasting ratios; delayed or electronic detonators; and specific in-situ blasting tests (the use of downhill initiation with short-delay detonators improves fragmentation and reduces ground vibrations);
- Development of blast design, including a blasting-surfaces survey, to avoid over confined charges and a drill-hole survey to check for deviation and consequent blasting recalculations;
- Hydraulic hammers or other mechanical methods should be preferred to improve rock fragmentation and minimize fly-rock risks, instead of using secondary blast (plaster blasting);
- Mechanical ripping should be preferably used to avoid or minimize the use of explosives;
- Other sources of vibrations are primary crushers and plant- screening equipment. Adequately designed foundations for these facilities should sufficiently limit vibrations.

### **Hydrology**

Surface water and groundwater regimes may be altered because of introduction of flood control structures and associated changes to the drainage pattern. Techniques to prevent minimize, or control impacts to the hydrologic regime caused by the project activities include the following:

- Reintroduction of stored water into rivers and streams to maintain the ecological flow;
- Floodplains should not be completely drained to maintain the ecosystem;
- Artificial recharge of aquifers should be considered where applicable. Alternatively,

reintroduction of stored water into the aquifers may be implemented, provided potential groundwater contamination can be avoided;

- Dredging activities should be designed and implemented to minimize drawdown with consideration of potential impacts to surface and groundwater resource flow and availability, including potential ecological impacts;
- To the extent that it is consistent with the post-closure plan, surface water systems should have a sufficient water depth to ensure the establishment of a stable aquatic ecosystems and habitats.

### ***Land Conversion***

Excavation activities at construction materials extraction sites often involve major topographical and land-cover changes to allow extraction activities, often including clearing of existing vegetation. Techniques to minimize land conversion impacts include the following:

- Selection of appropriate low-impact extraction (e.g. excavation, quarrying, and dredging) methods that should result in final site contours supportive of habitat restoration principles and final land use;
- Establishment of buffer zones from the edge of extraction areas, considering the characteristics of the natural habitats and the type of extraction activities;
- To reduce the consumption of land area and, consequently, the loss of soil, preference for extraction should be given to thicker deposits (these should be exploited as far as possible and as reasonable);
- Vegetation translocation and relocation techniques should be used as necessary. Vegetation cover, such as native local plants, topsoil, overburden, or spoils feasible for sustaining growth should be removed in separate operations and segregated for later use during site reinstatement, and materials to be used for site reinstatement should be stockpiled and protected from wind and water erosion, as well as from contamination;
- During extraction, ecological niches should be preserved and protected as far as possible;
- Smaller, short-lived extraction sites should be reclaimed immediately, and larger sites with a useful lifespan beyond 3–5 years should be subject to ongoing rehabilitation;

### **Respiratory Hazards**

Occupational exposure to dust and fine particulates is associated with all phases of quarrying activities (e.g. shoveling, ripping, blasting, cutting, transport, crushing, grinding, screening, and stockpiling operations). Specifically, exposure to nuisance dust (particles not otherwise classified, known as PNOC) and silica dust is considered relevant to construction materials extraction activities. Workers with long-term exposure to fine particulate dust (e.g. PNOC) are at risk for benign pneumoconiosis, emphysema, bronchitis, and fibrosis. Long-term exposure to silica dust may cause silicosis. The following measures are recommended:

- Excavators, dumpers, dozers, wagon-drills, and other automated equipment that requires an operator should be equipped with air conditioned, dustproof, and soundproof cabs;
- Use of personal breathing protection (e.g. masks, respirators), as described in the General EHS Guidelines.

### **Physical Hazards**

Physical injuries may occur during sub-project construction, material extraction, operation and maintenance activities (e.g. slips, trips and falls, falling rocks, excavations, work-at-height, impact with moving machinery such as backhoe loaders, compactors, etc., traffic accidents).

Recommended prevention and control measures include the following:

- The construction area shall be surveyed before work begins to ensure that adequate ingress and egress is provided for personnel and equipment;
- Good housekeeping to remove potential slip, trip, and fall hazards.
- As much as possible avoid work at height. If not, use proper access equipment, such as scaffold/work platform, for all work at height required.
- Access equipment (where necessary) shall be checked before work commences to ensure stability.
- Sides of excavation must be supported/battered where there is a risk to collapse.
- Inspect supported excavations before work commences each day.
- Personnel must stay within the protection of the excavation at all times.
- Substantial barriers to be erected around excavations.
- Suitable signs and barriers to be provided to warn of the work being undertaken.
- Ladders, stairs or ramps to be provided for safe access/egress, where necessary.
- Work shall be coordinated so as to reduce risks to workers from falling objects.
- Site traffic must avoid the area where work is in progress as far as practicable.
- Fire extinguishers shall be available on site.
- The placing of a second person (fire watch) on stand-by in case of emergency should be considered.
- Work shall be undertaken away from flammable materials (at least 15 m).
- Where other operations are being undertaken adjacent to welding, the combined effect must be considered and suitable systems work put in place.
- Materials shall be properly staked (low stake rise, anchored and barricaded off).
- Practice safe manual handling techniques (plan, get help if needed, place your feet firmly, bend your knees – not your back, firm grip, lift with legs, etc).
- Where possible, manual handling to be reduced by use of mechanical devices.
- Material safety data sheet (MSDS) shall be provided for all products so that workers are informed on precautionary measures.
- Hand washing facilities shall be made available.

- Wear the necessary PPE.

### **Explosives (if needed)**

Occupational safety hazards may be related to blasting activities resulting in accidental explosions. Prevention and control measures for explosion hazards include the following activities:

- Particular attention should be given to all explosives handling phases to prevent theft / improper use;
- A consistent blasting schedule should be adopted, minimizing blast-time changes;
- Specific warning devices (e.g. horn signals and flashing lights) and procedures should be implemented before each blasting activity to alert all workers and third parties in the surrounding areas (e.g. local communities). Warning procedures should include traffic limitation along local roadways and railways;
- Specific personnel training on explosives handling and safety management should be conducted;
- Blasting-permit procedures should be implemented for all personnel involved with explosives (e.g. handling, transport, storage, charging, blasting, and destruction of unused or surplus explosives);
- Blasting sites should be checked post-blast by qualified personnel for malfunctions and unexploded blasting agents, prior to resumption of work.

Additional potential risks to community health and safety include risks from uncontrolled access to construction sites, exposure to waterborne, water-washed, and water-associated diseases from creation of water impoundments, and exposure to increased traffic of materials transport vehicles. Guidance on the prevention and control of these types of risks is presented in the Bank's General EHS Guidelines.

### ***Land Instability***

Large-scale spoil-material disposal, water ponds, or mined land areas may be susceptible to landslide or collapse that could cause catastrophic incidents in surrounding populated areas. Prevention measures to minimize community risks should primarily include the following:

- Geological and geotechnical control programs in large areas, specifically focused on long-term land stability;
- Geotechnical monitoring of slopes, disposal sites, and water drainage, if possible, by remotely controlled monitoring systems.

### ***Water***

Construction materials extraction projects can significantly alter surface and groundwater regimes that are used by local communities for potable water supplies, raising of fish and other

edible materials, irrigation, stock watering, and source water for small businesses and industries. The health and well-being of communities can be affected by changes in water quality as a result of discharges from dewatering activities, storm water discharges, reduced water availability from water diversion, and lowering of groundwater supplies due to dewatering. These effects are often difficult to predict and can change over time as extraction facilities expand their operations.

- Construction material extraction operators should understand the nature and extent of community use of water resources, and potential impacts to its quality and availability as a result of dewatering or other hydraulic diversion activities.

### ***Decommissioning***

Extraction site reclamation and closure activities should be considered as early in the planning and design stages as possible. Sponsors should prepare a reclamation and closure plan that considers factors such as production phasing and overall site life, but all sites will need to engage in some form of progressive restoration during operations. While plans may be modified, as necessary, during the construction and operational phases, plans should include contingencies for temporary suspension of activities and permanent early closure and meet the following objectives:

### ***Physical Integrity***

All structures should remain stable such that they do not impose a hazard to public health and safety as a result of physical failure or physical deterioration. The structures should continue to perform the function for which they were designed. They should not erode or move from their intended location under extreme events or perpetual disruptive forces;

Physical hazards such as unguarded roads, quarries, and other openings should be effectively and permanently blocked from all access to the public until such time that the site can be converted into a new beneficial land use based on changed conditions at the site, as well as alternative uses by local communities or other industries for roads, buildings and other structures.

### ***Chemical Integrity***

Surface water and groundwater should be protected against adverse environmental impacts resulting from excavation and processing activities. Leaching of chemicals into the environment should not endanger public health or safety or exceed water quality objectives in downstream surface water and groundwater systems. Discharges to the public system must comply with the local sewer use regulations and the Industrial User Permit issued to the contractor.

### ***Construction Impact on River Water Quality and Quantity***

Activities or operations that can affect water quality and/or quantity are subject to this project. This includes construction sub-projects (even small sub-projects) and other activities that might generate wastewater or material debris that could contaminate precipitation runoff. Permits are



sometimes necessary and all projects must abide by local and state regulations. The protection of waters program assures compliance with regulations that protect physical, chemical and biological characteristics of rivers, streams, lakes and other surface waters from harmful activities in the water body. Activities in or near surface waters may require special permits and need to be reviewed to determine applicable requirements.

## **Annex 11: Guidance for Sub-project Risk Categorization**

1. Pursuant to the ES Policy, Section A, Paragraph 20, a Project (including all subprojects unless identified as small subproject according to the ES Policy, Section D, and Paragraphs 36 to 39 and Footnote 28) is classified as High Risk, Substantial Risk, Moderate Risk or Low Risk taking into account relevant potential risks and impacts, such as:

a- The type, location, sensitivity and scale of the Project including the physical considerations of the Project; type of infrastructure (e.g., dams and reservoirs, power plants, airports, major roads); volume of hazardous waste management and disposal;

b- The nature and magnitude of the potential ES risks and impacts, including impacts on greenfield sites including (e.g., rehabilitation, maintenance or upgrading activities); the nature of the potential risks and impacts (e.g. whether they are irreversible, unprecedented or complex); resettlement activities; presence of Indigenous Peoples; and possible mitigation measures considering the mitigation hierarchy;

c- the capacity and commitment of the Borrower to manage such risks and impacts in a manner consistent with the ESSs, including the country's policy, legal and institutional framework; laws, regulations, rules and procedures applicable to the Project sector, including regional and local requirements; the technical and institutional capacity of the Borrower; the Borrower's track record of past Project implementation; and the financial and human resources available for management of the Project;

d- other areas of risk that may be relevant to the delivery of ES mitigation measures and outcomes, depending on the specific Project and the context in which it is being developed, including the nature of the mitigation and technology being proposed, considerations relating to domestic and/or regional stability, conflict or security.

2. A Project is classified as High Risk after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable.

a- The Project is likely to generate a wide range of significant adverse risks and impacts on human populations or the environment. This could be because of the complex nature of the Project, the scale (large to very large) or the sensitivity of the location(s) of the Project. This would take into account whether the potential risks and impacts associated with the Project have the majority or all of the following characteristics:

(i) Long term, permanent and/or irreversible (e.g., loss of major natural habitat or conversion of wetland), and impossible to avoid entirely due to the nature of the Project;

- (ii) High in magnitude and/or in spatial extent (the geographical area or size of the population likely to be affected is large to very large);
- (iii) Significant adverse cumulative impacts;
- (iv) Significant adverse transboundary impacts; and
- (v) A high probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.);

b- The area likely to be affected is of high value and sensitivity, for example sensitive and valuable ecosystems and habitats (legally protected and internationally recognized areas of high biodiversity value), lands or rights of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities and other vulnerable minorities, intensive or complex involuntary resettlement or land acquisition, impacts on cultural heritage or densely populated urban areas.

c- Some of the significant adverse ES risk and impacts of the Project cannot be mitigated or specific mitigation measures require complex and/or unproven mitigation, compensatory measures or technology, or sophisticated social analysis and implementation.

d- There are significant concerns that the adverse social impacts of the Project, and the associated mitigation measures, may give rise to significant social conflict or harm or significant risks to human security.

e- There is a history of unrest in the area of the Project or the sector, and there may be significant concerns regarding the activities of security forces.

f- The Project is being developed in a legal or regulatory environment where there is significant uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex projects, or changes to applicable legislation are being made, or enforcement is weak.

g- The past experience of the Borrower and the implementing agencies in developing complex Projects is limited; their track record regarding ES issues would present significant challenges or concerns given the nature of the Project's potential risks and impacts.

h- There are significant concerns related to the capacity and commitment for, and track record of relevant Project parties, in relation to stakeholder engagement.

i- There are a number of factors outside the control of the Project that could have a significant impact on the ES performance and outcomes of the Project.

3. A Project is classified as Substantial Risk after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable.

a- the Project may not be as complex as High Risk Projects, its ES scale and impact may be smaller (large to medium) and the location may not be in such a highly sensitive area, and some risks and impacts may be significant. This would take into account whether the potential risks and impacts have the majority or all of the following characteristics:

(i) They are mostly temporary, predictable and/or reversible, and the nature of the Project does not preclude the possibility of avoiding or reversing them (although substantial investment and time may be required);

(ii) There are concerns that the adverse social impacts of the Project, and the associated mitigation measures, may give rise to a limited degree of social conflict, harm or risks to human security;

(iii) They are medium in magnitude and/or in spatial extent (the geographical area and size of the population likely to be affected are medium to large);

(iv) The potential for cumulative and/or transboundary impacts may exist, but they are less severe and more readily avoided or mitigated than for High Risk Projects; and

(v) There is medium to low probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.), and there are known and reliable mechanisms available to prevent or minimize such incidents;

b- The effects of the Project on areas of high value or sensitivity are expected to be lower than High Risk Projects.

c- Migratory and/or compensatory measures may be designed more readily and be more reliable than those of High Risk Projects.

d- The Project is being developed in a legal or regulatory environment where there is uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex Projects, or changes to applicable legislation are being made, or enforcement is weak.

e- The past experience of the Borrower and the implementing agencies in developing complex Projects is limited in some respects, and their track record regarding ES issues suggests some concerns which can be readily addressed through implementation support.

f- There are some concerns over capacity and experience in managing stakeholder engagement but these could be readily addressed through implementation support.

4. A project is classified as Moderate Risk after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable:

a- the potential adverse risks and impacts on human populations and/or the environment are not likely to be significant. This is because the Project is not complex and/or large, does not involve activities that have a high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to have the following characteristics:

- (i) Predictable and expected to be temporary and/or reversible;
- (ii) Low in magnitude;
- (iii) Site-specific, without likelihood of impacts beyond the actual footprint of the Project; and
- (iv) Low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).

b- The Project's risks and impacts can be easily mitigated in a predictable manner.

5. A project is classified as Low Risk if it's potential adverse risks to and impacts on human populations and/or the environment are likely to be minimal or negligible. These Projects, with few or no adverse risks and impacts and issues, do not require further ES assessment following the initial screening.

## **Annex 12: Accident/Incident Recoding, Reporting and Responding Guideline in Financed Sub-projects**

### **Introduction**

This guideline is intended to assist IDRMP Coordination Office on how to identify record and report occupational health and safety (OHS) incidents that may arise in the course of implementation of IDRMP financed sub-projects. Besides, indicative list of responses to OHS incidents and follow up requirements have been outlined in the guideline. This guideline is organized into the following sections:

- Section-I: Definition of Key Terms and Phrases
- Section-II: Potential OHS accidents/incidents in World Bank financed sub-projects that should be recorded and reported to the Bank
- Section-III: Accident/Incident Recording, Reporting, Investigation, Response and Follow up

### ***Section-I: Definition of Key Terms and Phrases***

- i. Occupational Accident: An occurrence arising out of work which results in a fatal or non-fatal injury. An indicative list of occupational accidents which may occur in the sub-projects are presented under Section II.
- ii. Incident: any unplanned event resulting in, or having a potential for injury, ill health, - damage or other loss. It is a health & safety incident which occurs in the course of the public work which could result in: work illnesses; physical injuries; minor injuries; dangerous occurrences which could have but did not injure any person; exposure to hazardous substances or circumstances; and any other incident that could put workers at risk. There are three levels of classification of incidents: Indicative, Serious and Severe which are described under section II.
- iii. Injury: any physical or mental damage to the body caused by exposure to a hazard. The hazards anticipated in the sub-projects are presented in section II.
- iv. Critical injury: an injury that a) places life in risk; (b) produces unconsciousness;(c) results in substantial loss of blood; (d) involves the fracture of a leg or arm; (e) involves the amputation of a leg, arm, hand or foot; (f) causes the loss of sight in an eye;
- v. Occupational Disease: Any disease contracted primarily as a result of an exposure to risk factors arising from the sub-projects activities in IDRMP. The list of diseases that may be contacted by IDRMP workers are summarized in section II.
- vi. Near miss: an incident that could have resulted in an injury or illness to people, danger to health, and / or damage to property or the environment.
- vii. Reportable Accidents/Incidents: All accidents or incidents (indicative, serious and

severe) that should be reported to IDRMP Coordinator, the task team leaders and safeguards specialists of the Bank which includes (a) all incidents (see section II for the list of potential OHS incidents in IDRMP sub-projects; (b) sub-projects related fatalities; (c) injuries; (d) dangerous occurrences/incidents/near miss; and (e) all accidents which may result in the injury for more than 48 hours or more following the accident. The safeguards specialists/focal persons who are assigned by IDRMP Coordination Offices to oversee safeguards issues are expected to report accidents and incidents.

***Section II: Potential OHS incidents in IDRMP sub-projects that should be recorded and reported to the Bank (by the IDRMP Coordination Office)***

i. Indicative incident: A relatively minor incident that negatively impacts a small number of people and does not result in significant or irreparable harm to people. Examples of potential Indicative Incidents that should be recoded and documented by the ES safeguards specialists/focal persons in each beneficiary town and IDRMP coordination offices and that should also be shared with the Bank's task team among others include:

- Minor injuries
- Underuse of personal protective equipment (PPE)
- Poorly organized or sporadic health & safety induction and or training
- Lack of Health & Safety plan and/or training for sub-projects workers
- Minor social conflict related to or affecting the project
- Localized dust pollution

Indicative incidents can be investigated, evaluated, managed, and resolved by IDRMP national Coordination Office using existing, project-level resources and with the support of the Task Team.

ii. Serious incident: An incident that caused or may cause significant harm to workers, communities, and may result in some level of injury. Examples of serious incidents may include injuries to workers that require off-site medical attention, exploitation or abuse of vulnerable groups, consistent lack of Occupational Health and Safety (OHS). Serious incidents require an urgent response. Examples of potential Serious Incidents that should be recoded and documented by the ES safeguards specialists /focal persons in each beneficiary city and IDRMP Coordination Offices and that should also be shared with the Bank's task team among others include:

- Instances of serious communicable diseases among workers
- Chronic non-use of PPE at sub-project site
- Consistent lack of health & safety plans and training at sub-project site

- Injury/ies requiring off-site medical attention
- Cases of mistreatment of communities potentially, including vulnerable groups including incidents such as sexual harassment

iii. Severe incident: Incidents that caused or may cause great harm to individuals. A severe incident is complex and expensive to remedy (if possible) and is likely irreversible. Examples of potential Severe Incidents that should be recoded and documented by the ES safeguards specialists /focal persons in each beneficiary city and IDRMP Coordination Offices and that should also be shared with the Bank's task team among others include:

- Any fatality
- Permanent disability
- Outbreak of life-threatening communicable disease
- Incidents that caused or may cause great harm to workers, communities, may result in high levels of injury
- Abuses of community members including vulnerable groups by other project workers, including but not limited to GBV
- Requires an urgent and immediate response

The following are the likely occupational health and injury issues that may arise due the above-listed incidents in the course of implementation of IDRMP financed sub-projects:

- Snake / dog bites;
- Injuries: cuts, punctures, sprains, abrasion, fractures, eye injury;
- Back and joint injuries;
- Respiratory illness from ingesting particulates and volatile organics during waste collection;
- Infections from direct contact with contaminated materials
- Puncture wounds leading to infections;
- Health risks: respiratory diseases, diarrhea; eye trouble; headaches and nausea from anoxic conditions where disposal sites have high methane, carbon dioxide, and carbon monoxide concentrations
- Road accidents while on sub-project activities
- Occupational illnesses related to infection by bacteria, fungi, and viruses include contact skin infections, diarrhea, and skin diseases

### Section- III: Accident/Incident Recording, Reporting, Investigation, Response and Follow up

#### a. Accident/Incident Recording and Reporting



Regardless of whether personnel injuries occur, all reportable incidents and dangerous occurrences must be recorded and reported to the Bank and appropriate authorities in compliance with Ethiopian regulations by IDRMP Coordination Offices at each beneficiary city and by the national IDRMP Coordination Office. Recording and reporting of accidents/incidents should be one of the responsibilities of the ES safeguards specialists/focal persons in each city. The National IDRMP Coordination Office should report the incidents to the Bank. The Incident Report should include, at a minimum, the following information:

- Preliminary classification of the incident
- What was the incident? What happened? To what or to whom?
- Where and when did the incident occur?
- When and how did we find out about it?
- Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions?
- What were the conditions or circumstances under which the incident occurred (if known at this stage)?
- Is the incident still ongoing or is it contained? o Is loss of life or severe harm involved?
- Is the national IDRMP coordination office aware of the incident? What is their response to date?
- What measures have been or are being implemented by IDRMP coordination office?

Classification of the incident must be done as rapidly as possible, so that the Bank is able to respond to the incident within a reasonable time-frame. The incident should be classified within 48 hours of receipt of the information, within 24 hours will be preferable if possible. If it cannot be fully classified due to missing information, then a preliminary classification should be provided and confirmed as details become available.

#### b. Investigation of incidents

The Borrower (IDRMP Coordination Office) is responsible for carrying out investigations of incidents. It should also promptly provide information requested by the Bank and facilitate incident site visits. The IDRMP Coordination Office should undertake root cause analysis (RCA) to understand and document the root cause(s) of the incident. The Borrower or IDRMP coordination office is responsible for funding the preparation of the RCA. The RCA should be completed as soon as possible, ideally within 10 days of the incident. The findings of the RCA should be used by IDRMP Coordination Office to develop measures to be included in a Safeguards Corrective Action Plan (SCAP). IDRMP coordination office

should share the RCA with the Bank and provide complete information about the incident; facilitate additional site visit(s) if needed. However, RCA is not mandatory, especially in cases where information is clear and readily available, it is essential that IDRMP coordination office and the Bank understand the underlying cause(s) of the incident to agree on measures to prevent recurrences.

### c. **Response**

For **Indicative** incidents, documentation and remediation of the incident by IDRMP Coordination Office /the Borrower may be the only action required. For **serious and severe** incidents, where RCA or other investigation is conducted by IDRMP Coordination Office, the Bank and IDRMP Coordination Office on a set of measures as appropriate to address the root causes to help prevent any recurrence of the incident. The measures determined as appropriate by the Task Team should be captured in a **Safeguards Corrective Action Plan (SCAP)**.

The SCAP specifies the actions, responsibilities, and timelines to be implemented by IDRMP Coordination Office. IDRMP Coordination Office is responsible for implementation of the SCAP. The SCAP may include, for example, IDRMP Coordination Office actions such as the design or upgrading and implementation of Health and Safety management systems, processes and training to support consistent safe performance, compensation for injuries or a fatality. The SCAP also may include or request Bank actions such as provision of technical assistance by the Bank, and/or loan restructuring, including additional financing. The Bank will provide guidance on the preparation of the SCAP.

**Example of a Safeguards/Standards Corrective Action Plan (SCAP) given in Table below.** The contents of the SCAP are driven by the findings of the Root Cause Analysis (RCA), and are specific to the type of incident, severity, and IDRMP Coordination Office's capacity to implement corrective and preventative measures. The SCAP will be implemented by the IDRMP Coordination Office for Serious and Severe incidents, with Bank supervision and support. As a general guide, the SCAP could contain the sections set out in the table below:

**Table 1: Example SCAP Sections**

<b>No</b>	<b>Example SCAP Sections</b>	<b>Possible IDRMP Coordination Office's Actions</b>
1	Immediate to near term actions	Provide <b>medical care and counseling, pay compensation</b>

2	Medium term/ongoing actions	Review existing OHS monitoring and reporting tools, with a focus on increased monitoring of leading indicators to increase effectiveness.
		Address staffing gaps, if any. This may include adjustments in terms of number, competence, onsite presence, communication and reporting so that project activities could comply with the OHS requirements

Examples of **potential responses** by IDRMP Coordination Office to worker occupational health and safety incidents of varying severity are summarized below:

Potential IDRMP Coordination Office actions for **Severe Incidents** such as fatality, permanent disability, or outbreak of life-threatening project-related communicable disease could include:

- Improvement of work processes and procedures
- Addressing gaps in competence, expertise
- Ensuring that Health and Safety risk assessment has been conducted and appropriate management plans are put in place, implemented and enforced

Potential IDRMP Coordination Office actions for **Serious Incidents** such as major (non-fatal) accident or near-miss may among others include:

- Enforcing use of personal protective equipment
- Complementing IDRMP Coordination Office with adequate OHS competencies and expertise
- Reviewing relevant sections of health and safety risk assessment for adequacy
- Implementing (revised) OHS management plan, including training
- Improving use of grievance redress mechanism

Potential IDRMP Coordination Office actions for **Indicative Incidents** such as repeated failure to respond to notification to remedy safeguards issues (e.g. safety kit incomplete or not present) may include:

- Training and messaging
- Remedying outstanding issues
- Improving work process or procedure

#### **d. Follow up**

IDRMP Coordination Office shall implement Safeguards Corrective Action Plan;

monitor progress; report on implementation to the Bank.

#### ***Section -IV: Responsibilities of the IDRMP Coordination Office and the Bank***

The IDRMP Coordination Office's as well as the Bank's responsibilities at different stages starting from the initial communication an OHS incident to safeguards response and follow are summarized in the Table below which is customized from the Bank's Environment and Social Incident Response Toolkit.

**Table 2: Responsibilities of the IDRMP Coordination Office and the Bank**

Step I –Initial Communication			
No	Action	The Bank's Role	IDRMP Coordination Office's Role
1	Incident Occurs	Make sure that the TTL, Environmental and Social (E&S) specialists, Regional Safeguards Coordinator (RSC), and E&S PMs are aware (including RSA/ESSA for projects under their oversight); and launch the SIRT process with an initial communication of the incident to relevant team members copying the project's Global Practice (GP) PM. If Bank staff or consultant is involved, the Task Team Leaders (TTL) should refer the matter to their PM and Human Resources.	Inform Bank following the requirements of this guideline; inform appropriate authorities in compliance with local regulations; secure the safety of workers, public, and provide immediate care
Step II – Classification - Assessing the severity of the incident			
No	Action	The Bank's Role	IDRMP Coordination Office's Role

2	Classify Incident	TTL with support of E&S specialists classifies incident in terms of severity, (including RSA/ESSA for projects under their oversight), using the Incident Classification Guide listed in the in-Section II of this guideline.	Promptly provide information about the incident to the Bank as well as further details as they become available.
Step 3 – Notification – Who needs to know about the incident?			
No	Action	The Bank's Role	IDRMP Coordination Office's Role
3	Notify IDRMP Coordination Office about the Bank's process for addressing the incident	Communicate with IDRMP Coordination Office regarding investigation requirements	Respond to Bank communications regarding investigation
4	Notify IDRMP	Communicate with IDRMP	Respond to Bank communications
Step 4 – Investigation – What happened?			
No	Action	The Bank's Role	IDRMP Coordination Office's

5	Understand facts on the ground	For severe incidents or in cases where information is lacking, the Bank (task team) fields a preliminary fact-finding mission with necessary expertise for the specific incident. Due consideration should be given to safety issues prior to fielding a mission, following country office clearance and Bank security practices.	Promptly provide information requested by the Bank and facilitate incident site visits.
6	IDRMP Coordination Office's Root cause analysis (RCA)	Support the IDRMP Coordination Office to carry out an RCA. An RCA or equivalent analysis to be conducted by the IDRMP coordination Office would be required for all serious and severe incidents. Receive and review the RCA and discuss with the IDRMP Coordination Office their plans or actions taken and any further required remedial measures based on the findings of the RCA.	Undertake a RCA to understand and document the root cause(s) of the incident. The RCA should be completed as soon as possible, ideally within 10 days of the incident. The findings of the RCA should be used by the IDRMP Coordination Office to develop measures to be included in a Safeguards Corrective Action Plan (SCAP). Share the RCA with the Bank and provide complete information about the incident; facilitate additional site visit(s) if needed.
Step 5 – Response			
No	Action	The Bank's Role	IDRMP Coordination Office's Role
7	Develop Safeguards Corrective Action Plan (SCAP)	Support the IDRMP Coordination Office to design and agree on an appropriate SCAP.	Design the SCAP and discuss with the Bank, including actions, responsibilities and timelines for implementation, and a IDRMP Coordination Office
			monitoring program

Step 6 – Follow up			
No	Action	The Bank's Role	IDRMP Coordination Office's
8	Implement SCAP	Supervise/support and advise during SCAP implementation	Implement SCAP; monitor progress; report on implementation to the Bank.
9	Complete ISR	TTL reflects incident in ISR (or interim ISR); the ISR section relating to incident is reviewed by Country Lawyer	none
10	Monitor SCAP implementation and provide on-going technical support if necessary	TTL with advice of E&S specialists supervises/supports the IDRMP Coordination Office's SCAP implementation	
11	After-Action Memo to the CD, cc'd to others as per the notification guide (based on severity of the incident)	TTL prepares the After-Action Memo to summarize the incident, root cause analysis findings, and agreed SCAP actions.	

## Annex 13: Outline of ESIA Report

(Note – The ESIA report outline shall be updated before project implementation.)

An environmental and social impact assessment (ESIA) report for an infrastructure project should focus on the significant environmental and social issues of the proposed project, whether it is/or includes new construction or rehabilitation. The report's scope and level of detail should be commensurate with the project's potential impacts.

The ESIA report should include the following items (not necessarily in the order shown):

- a. **Executive summary.** Concisely discusses significant findings and recommended actions.
- b. **Policy, legal, and administrative framework.** Discusses the policy, legal, and administrative framework within which the ESIA is carried out. Identifies relevant international environmental agreements to which the country is a party.
- c. **Project description.** Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required. Indicates the need for any resettlement plan. Normally includes a map showing the project site and the project's area of influence.
- d. **Baseline data.** Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigation measures. The section indicates the accuracy, reliability, and sources of the data.
- e. **Environmental and social impacts.** Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.
- f. **Analysis of alternatives.** Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the “without project” situation—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.
- g. **Environmental and Social Management Plan (ESMP).** Covers mitigation measures, monitoring, budget requirements and funding sources for implementation, as well as



institutional strengthening and capacity buildings requirements.

**h. Appendixes**

- i. **List of ESIA report preparers** – individuals and organizations.
- ii. **References** - written materials both published and unpublished, used in study preparation.
- iii. **Record of interagency and consultation meetings**, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.
- iv. **Tables presenting the relevant data** referred to or summarized in the main text.
- v. **List of associated reports** (e.g., socio-economic baseline survey, resettlement plan)

## Annex 14: Format of an Annual and Quarterly Reports

(Note – The Annual and Quarterly Reports templates shall be updated before the start of project implementation.)

<b>Relevant environmental</b>							
<b>Reporting dates</b>							
<b>Name of Woreda</b>							
<b>Subprojects approved:</b>							
<b>Sub-project Title</b>	<b>Activities</b>	<b>Project Phase</b>	<b>Environmental Category</b>	<b>ESIA / RAP, ESMP Completed</b>	<b>Environmental License Granted</b>	<b>Effectiveness of ESMP</b>	<b>Issues</b>
(Name, location, title or reference)	(New construction, rehabilitation, maintenance)	(Planning, construction, operation)	(High, Substantial, Moderate, Low) or (Schedule 1, 2, and 3)	Yes, No, or N/A	Yes, No, or N/A	Good, poor, or needs improvement	Major issues to highlight
1.							
1.							
2.							
...							

## **Annex 15: SEA/SH Risk Assessment, and Prevention and Response Action Plan**

**Name of project: Ethiopia Integrated Disaster Risk Management Project (P176327)**

**Client Name: MoWE/BDA**

**Level of Risk Identified through Risk Assessment: Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) Rating: Moderate**

### **1. Introduction**

The proposed Project aims to support the Government of Ethiopia in its efforts to reduce poverty through quality growth and build longer-term disaster and climate resilience by strengthening the institutional and technical foundation to operationalize and mainstream disaster risk management as well as to plan and implement flood risk reduction and management activities. The activities include leveraging physical investments in flood risk reduction and early warning, strengthening institutional DRM capacities at the federal and regional level, and enhancing financial preparedness and disaster risk financing.

In brief, the Project Development Objective (PDO) is to support the Government of Ethiopia to strengthen its institutional capacity for DRM, and to reduce the impact of floods.

### **2. Contextual SEA and SH Risks**

In the context of IDRMP, the subprojects, particularly those involving construction of basin-level flood risk control and reduction infrastructural works under Component 2, can potentially pose a modest risk of an environment for SEA/SH, affecting both target community members, the workforce and service users. Social impacts resulting from GBV-SEA/SH are critical to address, even though, based on the below assessment of the risk factors and the nature and scope of investment subprojects, the risk is still considered to be moderate. This is in agreement with the earlier finding of SEA/SH Risk Screening Tool which rated the risk as moderate. The preliminary risk assessment highlighted that the major risk factors include labor influx, lack of access to services including psychosocial, health and GRM, and limited coordination among and between local governments at grassroots level.

Knowledge and skill on prevention and response mechanism to SEA/SH and GBV, are scanty. Community groups in the rural areas of the IDRMP implementation basins which are described as '*Vulnerable Groups and Underserved Peoples in the Project Basins*' are expected to be the most vulnerable to SEA/SH. In addition, women and adolescent girls and boys in the local communities where subproject physical investments are carried out and those children attending nearby schools are more susceptible to sexual harassment, abuse and exploitation by construction workers and others working in subproject related activities. The area of impact

beyond the project site includes communities adjoining the project. This extends beyond the specific location where civil works are being carried out. These communities are at risk of SEA/SH, particularly when workers are highly mobile.

### **3. Project SEA and SH Risks**

The GBV-SEA/SH risks can intensify within local communities when there is labor influx of male workers from outside the area. Such workers, more often than not, come without their families and have reasonable disposable incomes relative to the local community, and this can pose a risk in terms of sexual harassment, violence and exploitative transactional relationships. These risks are higher where workers come into close contact with the local community or when living together in remote areas. In addition, adolescent girls and boys in the local communities where subproject physical investments are carried out and those children attending nearby schools are more susceptible to sexual harassment, abuse and exploitation by construction workers and others working in subproject related activities.

Workers on infrastructure projects are predominantly young and male. Those who are incoming are single or are separated from their family or spouse, and are outside their habitual sphere of social control. Further, in rural settings, where the presence of law enforcement is often low, the risk of sexual harassment for local women is likely higher, in particular for younger women and girls. In the context of labor influx, fraternization or the practice of conducting close social relations by incoming workers with female members of the local community, can lead to a range of unacceptable and/or illicit behavior. This includes unwanted aggressive advances, sexual harassment, gender-based violence against women and children.

During the construction phase, workers may also be vulnerable to various forms of harassment, exploitation and abuse, aggravated by traditionally-male working environments. In such circumstances, female construction workers may be subjected to sexual harassment and exploitation as common features of workplace life. This GBV- SEA/SH may mostly be committed by coworkers or construction supervisors, and this is largely due to gendered stereotypes about the sexual availability of female construction workers.

An important precipitating factor for the risk of SEA/SH is land acquisition that occurs during the construction phase. Individuals who make decisions about resettlement and compensation can abuse this power to sexually exploit vulnerable community members, such as those in female-headed households. This risk is exacerbated in project affected local communities where women cannot legally hold land titles and are therefore more easily removed from their land.

Understandably, the risk factors that increase the potential for GBV-SEA/SH in flood risk control/reduction construction include:

- Large-scale influx of transient male workers into small and often rural host communities with low capacity to absorb the sudden increase of workers;
- Remote locations where people have limited access to resources to report GBV-SEA.SH and receive support;
- Presence of security personnel (local police, *kebele* militias, etc.) who can provide protection but can also abuse their positions of power and status to perpetrate GBV.
- Male workers transporting goods (e.g. truck drivers), who can perpetrate GBV on routes and at truck stops associated with the subproject, even if not on the project site.
- Poorly designed or maintained physical spaces on subproject sites and in worker accommodation, for example bad lighting in and around grounds and access routes.

At the IDRMP level, there is yet no staff responsible for gender and SEA/SH and gender-based violence related issues. In addition, as the Project is a new one, it has not started providing trainings on SEA/SH, and hence, the knowledge and skill of IDRMP implementers assigned at different levels is limited about SEA/SH prevention and response. Moreover, the project does not have a mechanism to address issues related with SEA/SH. However, it is anticipated that construction workers, local workforce and beneficiary community members have some degree of knowledge and awareness about SEA/SH and GBV. This mainly comes from the mass media and public sensitization campaigns and workshops conducted by NGOs and grassroots women and children and health offices. Knowledge and skill on prevention and response mechanism to SEA/SH and GBV are nevertheless scanty.

### **Mitigation measures**

It is of paramount importance that the IDRMP Project Management Unit (PMU) see to it that robust measures to address the risk of GBV are adopted. These include

- Assign a gender expert at the PMU/PCU and paid focal person at the basin and sub-basin office levels.
- Apply GM strategy in all the project cycle through application of gender analysis, gender responsive allocation of resources to address gender specific interventions and M&E.
- Mandatory and repeated training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women;
- Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted;
- Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for non-compliance (e.g., termination), and

- Contractors adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.
- Ensure codes of conduct are publicly disclosed in local languages and are widely accessible to all workers and all groups of people in project areas.
- Deliver periodic mandatory training on GBV to all workers, including contractors, subcontractors and primary suppliers, as well as relevant consultants and clients.
- Develop safe, confidential and accessible grievance reporting, referral and support systems for workers and local communities.
- Involving relevant authorities such as law enforcement, community leaders in handling sexual abuse in project communities and ensure that where relevant, referral pathways for eventual cases are identified.
- Training grievance redress committee to handle issues of sexual abuses perpetrated by project workers, and members of the community.
- Provide safe, secure and separate living spaces for male and female construction workers.
- Provide lighting around project sites, including around latrines and access routes.
- Install separate, lockable latrines for female construction workers.
- Develop M&E system with clear indicators to follow up progress made and challenges encountered (See Annex 16 for SEA/SH Prevention and Response and Action Plan)

#### **4. Risk Management Systems (status/proposed interventions)**

A Directive, which may also be regarded as a policy document of the client on SEA/SH, is in the process of being drafted by the Directorate of Women, Children, and Youth Affairs of the Basin Development Authority (BDA) of Ministry of Water and Energy (MoWE) to prevent sexual abuse and harassment and sexual misconduct.

- In its preamble, the Directive states that whereas sexual harassment and sexual misconduct are perpetrated against both men and women, currently, because of unequal balance of power, women are vulnerable to the problem; they are unable to attend their work/education on equal footing with men and become effective preventing them from discharging their civic duties.
- According to the Directive, sexual misconduct, sexual harassment, sexual violence, rape and other sexual conducts which are unacceptable by our society, on the basis of the manner they are committed and the harm they cause and their impact on public morality are divided into petty and grave sexual misconducts and harassments.
- With regard to disciplinary measures to be taken, where any member of the Authority or any individual contractor or employee of a contractor has been found committing acts

which fall under sexual misconduct, he/she shall be subject to one or more than one concurrent disciplinary measures taking into consideration the nature of the offense.

- The Directive also emphasizes that as a manner of taking measures, the Authority shall establish a Sexual Misconduct Investigating Committee that shall investigate and give decision, which shall be submitted to the higher authority for final action, on sexual harassment and sexual misconduct committed by the staff of the Authority, individual contractors and their employees having short term or long term contractual relations with the Authority.
- The Directive outlines the procedures of lodging complaint and any individual who alleges that sexual abuse and harassment and sexual misconduct have been committed against him/her shall lodge her/her complaint in writing to Gender Office within sixty days starting from the date of commission of the alleged sexual harassment and sexual misconduct.
- There are provisions in the Directive on the protection to members of the committee, complainants, and witnesses. It states that the Authority shall insure that any individual who is a complainant, witness or who is appointed as a member of the organization or any individual contractor who has signed a short term contract with the Authority who is voluntarily a whistleblower shall get appropriate protection.

## 5. SEA/SH Action Plan

No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
1	Lack of knowledge and skill on SEA/SH and related preventive and responsive measures	a. Sensitize the implementation agency (IA) staff on the importance of mitigating SAE/SH risks on the project, and putting in place mechanisms to address reported allegations of	Soon after commencement of Project implementation.	PMU (MoWE), PCU (EDRMC) together with the gender expert PSEA Focal Persons	Number of IA staff who attended the sessions	
		b. Provide training on prevention from and response to SEA/SH to PMU, ENDRMC (PCU), EMI, and other major implementers; ToT to gender focal persons.	Soon after Project commencement	PMU, PCU and PSEA Focal Point	No. of staff trained on SEA/SH. No. of Gender focal persons who attended ToT training sessions	

No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
		c. Raise awareness of all project implementers at basin/sub-basin offices and <i>woreda</i> level: sessions content should include at least the following: <ul style="list-style-type: none"> <li>• Definitions of SEA, SH, GBV</li> <li>• How the project could exacerbate risks of GBV</li> <li>• Available SEA/SH reporting and referral mechanisms</li> </ul>	Soon after project commencement.	PMU Gender Focal Point.	<ul style="list-style-type: none"> <li>• No of implementing partners' staff who attended awareness raising sessions.</li> <li>• No of awareness raising sessions.</li> </ul>	
		d. Raise awareness of project staff SEA/SHB Grievance Redress Mechanisms and Code of Conduct on SEA and SH.	Soon after project commencement.	PMU and Basin Office Gender Focal Persons	No. of project staff who attended awareness raising sessions.	
		e. Site-specific SEA/SH consultations to take place with local stakeholders (SEA/SH service providers ) including community based structures	periodically	PMU, PCU, implementers with Gender Focal Points and stakeholders	No of consultation sessions conducted	
		f. See to it that contractors in subproject implementation sites adopt (a) Mandatory and repeated training and awareness raising for their workforce about refraining from unacceptable conduct toward local community	Periodically	PMU with Gender Focal Points	No. of training sessions conducted	
2	Lack of knowledge on prevention and available resource for SEA/SH	As part of the project's stakeholder consultations, those affected by the project should be properly informed of SEA/SH risks and project activities to get their feedback on project design and safeguard issues. Consultations need to engage with a variety of stakeholders (political, cultural or religious leaders, health teams, local	periodically	Gender expert at PMU and PSAE Focal Point.	Number of Beneficiaries Trained.	Monitoring of implementation of Stakeholders Engagement Plan.



No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
		councils, social workers, women's organizations and groups working with children) and should occur at the start and continuously throughout the implementation of the project.				
3	Lack of gender sensitive social assessment.	The project's social assessment to include assessment of the underlying SEA/SH risks and social situation, using the SEA/SHB risk assessment tool.	Ongoing following Project commencement	PMU, PCU	Project related SEA/SH risks identified.	Ongoing review during implementation support missions.
4	Lack of service mapping.	a. Map out SEA/SH prevention and response actors in project adjoining communities. This should incorporate an assessment of the capabilities of the service providers to	Soon after Project commencement.	PMU, PCU, Gender Focal Points, Project implementers	Service Mapping report.	National level mapping is done, good to update and prepare area specific mapping continuously.
		b. Area-specific mapping of SEA/SH prevention and response actors (including service providers) and assess their capacity to provide quality survivor centered service.	Soon after Project commencement.	Focal person in subproject site in target basins and city/town with PMU gender expert and data collectors dedicated to each site.	Service Mapping	National level mapping be done, and good to update and prepare area specific mapping continuously.
		c. Area specific mapping of informal support groups (CRC, HTP, WDG, CCC) at the community level.	Soon after Project commencement	Area specific Focal Points, PMU Gender Expert, Project implementers.		PMU to coordinate with <i>woreda</i> level Women & Children Affairs
		d. Strengthen SEA/SH response services based on service mapping findings: including through advocacy for actions to the identified gaps and targeted trainings	Soon after Project commencement.			
5	SEA/SH referral pathways not established	Establish and/or strengthen SEA/SH referral pathways and coordination mechanisms	Soon after Project commencement.			

No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
6	Safeguard plan not responsive to SEA/SH	Review the Implementing Agency (IA) capacity to prevent and respond to SEA/SH as part of Safeguard Preparation.			Gender mainstreamed	Ongoing review during implementation support missions.
7	Lack of guideline and response mechanism on SEA/SH	a. Make certain the availability of an effective grievance redress mechanism (GRM) with multiple channels to initiate a complaint. It should have specific procedures for GBV including confidential reporting with safe and ethical documenting of GBV cases.	Soon after Project commencement.	The SAE/SH Consultant	GRM In place	Ongoing- the preparation for putting in place the GRM mechanism should start swiftly. Ongoing monitoring and reporting on GRM to verify it is working as intended.
		b. Establish a response and accountability procedures for managing related grievances and supporting survivors.	Before the commencement of civil works.	PMU, PCU		
		c. Signing codes of conduct by project and contractors' workers.	Before the commencement of civil works.	PMU, PCU		
		d. Prepare GRM for handling of SH	Before the commencement of civil works.	PMU, PCU		
		e. Raise awareness (through mass event) of project beneficiaries (including their partners) on SEA/SH, reporting mechanisms (GRM), available SEA/SH response services, and the importance of timely accessing lifesaving response services.	Quarterly	PMU, PCU Gender Points, Focal and project implementers.	<ul style="list-style-type: none"> <li>No. of mass events organized</li> <li>No of beneficiaries (M, F) reached</li> </ul>	Ongoing review during implementation support missions
		f. Assign SEA/SH focal person within the existing GRM committee.	Before establishment of GRM	PMU, PCU, and implementers	No. and gender mix of the Committee Members	
		g. Conduct training for the GRM committee on SEA/SH responsive.	Soon after Project commencement.	PMU, PCU gender expert		
		h. Include SEA/SH prevention and mitigation measures in	Before the commencement of civil works	PMU, PCU		

No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
		the Standard Bidding Documents (SBDs) to be extended to contractors and sub-contractors.				
		i. Contractors and sub-contractors should develop a Code of Conduct in accordance with the requirements of ESS2 or the LMP	Before the commencement of civil works.	PMU, PCU		
		j. Revise the existing Code of conduct and incorporate articles in the CoC with regard to SEA/SH. Raise staff awareness on the CoC, available compliant reporting mechanisms and GBV response services.	Soon after Project commencement.	PMU, PCU		
8	Lack of gender sensitive safeguard instruments	a. Have SEA/SH risks adequately reflected in all safeguards instruments (i.e., Project ESMP, C-ESMP)—particularly	Soon after project commencement	Gender Expert with the technical experts		Ongoing review during implementation support missions.
		b. Address SEA/SH in existing safeguard instruments including GRM, Stakeholders	Soon after Project commencement			
		c. Review that the GRM receives and processes complaints to ensure that the protocols are being followed in a timely manner, referring complaints to an established mechanism to review and address GBV complaints.	Soon after Project commencement.			
9	Lack of communication and networking on prevention from and response to SAE/SH	Produce and disseminate communication materials on prevention from and response to SEA/SH to beneficiaries.	Periodically	PMU gender expert and Focal Points at all levels together with communication experts	Materials disseminated	
10	Lack of follow-up and monitoring	a. Undertake regular M&E of progress on SEA/SH activities, including reassessment of risks as appropriate.	Periodically		Sex and gender	

No.	SEA/SH Risks	Actions	Timeline	Implementing body	Indicators	Ongoing risk Mgt.
		b. Monitor implementation of SEA/SH protocols to address SEA/SHBV	Periodically		disaggregated data available	
11	Lack of networking with stakeholders for SEA/SH prevention and response	Establish working relations with MoH, police, NGOs CBOs etc. which provide services to survivors.	Soon after Project commencement.	PMU, PCU gender expert and Focal persons at all levels	Networks established	
12	Absence of gender expert in PMU	Assign gender expert position in PMU Assign V Specialists in the IA and in the Supervising Consultant) to implement the Action Plan	Soon after Project commencement.	PMU	No. of experts assigned.	
13	Absence of GBV specialist in IAs and consultants.	Assign GBV Specialists in the IA and in the Supervising Consultants to implement the Action Plan	Soon after Project commencement.	PMU, PCU	No of experts assigned.	

## Annex 16: Minutes of the Community Consultation

Date 8/3/2014 E.C  
 Place of meeting Awash Belo *Kebele* (Teji *Woreda*)  
 Time of meeting 3. 00-7.00

### Name of Participants

- Mr. Tequam G/Mariam Environmental Consultant
  - Dr Ayalew Gebre Social consultant
  - Mr. Getu Robi Social focal point
  - Mr. Bekele Bezuwork Environmental focal point
  - Mr. Fitsum Kebedom Resettlement focal point
- Including 11 household community Gov't official representatives

### Purpose of meeting

- The purpose of the meeting is to consult potentially impacted residents about the impact and risk of implementation of Integrated Disaster Risk management project on Teji flood plain.

### Agenda and Topic Discussed

- Consultation on the potential impact and mitigation measure of the implementation of integrated disaster risk management project on the surrounding resident of Teji.

Around 11 household's representatives from different social groups of the community participated in the consultation processes. Government officials, women and youth representatives and religious elders those who are among the participants in the consultation.

Main issues raised	Proposed measures
<b>Consultation with local communities</b>	
Poor quality of construction of flood protection infrastructure	Construction schedule will be properly planned and executed
Infrastructure blocking access to water supply, gravity irrigation	Bridge should be considered in the design for human, animal, and goods transportation
Quality of construction activities are compromised because of the rush to complete before flooding season and timely maintenance	Proper scheduling of construction activities considering the rainy season
Based on past experiences, resettlement sites were not suitable and do not meet the needs of communities and houses built are not appropriate for the weather and living conditions. Resettlement sites are located far	Resettlement sites should be selected with participation of communities and clan leaders and basic infrastructure and services should be provided

from basic services.	
Irrigation schemes and infrastructure may block movement of people, animals and goods.	Specific designs will ensure that impact is avoided or minimized
Flood protection would adversely affect the watering of pastureland, filling of shallow hand dug wells, recharging of ground water,	Specific designs will ensure that impact is avoided or minimized
Livelihood of sand extractors will be adversely affected due to construction of dykes	Specific designs will ensure that impact is avoided or minimized
Land acquisition and compensation issues	Impact on land is limited and compensation will be according to the applicable rules and regulations
Project might cause flooding in downstream areas	Specific design will assess both upstream and downstream impacts
Improved health services due to the adverse effect of flooding on health	Project will work with relevant office to reduce health risks

In general, the consulted participant perceived, implementation of Integrated Disaster Risk Management Project around Teji flood plain area will increase positive social and environmental impact on the community of project implemented area.

## Annex 17: List of Community Consultation Participants

पृ० ०८/१३/२०१०

List of Participants in Community Consultation

07004: P178: VNL + 01: 01861012: 07997: P177: 0797: 0790: 0790

የጥቅምት ፡ ፲፱ ሂሳብ ስራ ተጠቅሟል

737: PSLA07  
797. 790

до 02/03/2014

ተ.ቁ.የ	ገጽ	ገጽ	ገጽ	ገጽ
1	ገጽ 1	ገጽ 1	ገጽ 1	ገጽ 1
2	ገጽ 2	ገጽ 2	ገጽ 2	ገጽ 2
3	ገጽ 3	ገጽ 3	ገጽ 3	ገጽ 3
4	ገጽ 4	ገጽ 4	ገጽ 4	ገጽ 4
5	ገጽ 5	ገጽ 5	ገጽ 5	ገጽ 5
6	ገጽ 6	ገጽ 6	ገጽ 6	ገጽ 6
7	ገጽ 7	ገጽ 7	ገጽ 7	ገጽ 7
8	ገጽ 8	ገጽ 8	ገጽ 8	ገጽ 8
9	ገጽ 9	ገጽ 9	ገጽ 9	ገጽ 9
10	ገጽ 10	ገጽ 10	ገጽ 10	ገጽ 10
11	ገጽ 11	ገጽ 11	ገጽ 11	ገጽ 11
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

# Consultation participants from Bora and Liben Chiquala, East Shoa Zone of Oromia Region

Attendance for Community Consultation					
No	Name	Sex	Woreda	Kebele	Signature
1	Dabale Gata	M	Boro	1	Leiman
2	Dabale Gata	M	21	51	21
3	Dabale Gata	M	21	51	21
4	Dabale Fole	M	21	51	21
5	Dabale Fole	M	21	51	21
6	Dabale Fole	M	21	51	21
7	Dabale Fole	M	21	51	21
8	Dabale Fole	M	21	51	21
9	Dabale Fole	M	21	51	21
10	Dabale Fole	M	21	51	21
11	Dabale Fole	M	21	51	21
12	Dabale Fole	M	21	51	21
13	Dabale Fole	M	21	51	21
14	Dabale Fole	M	21	51	21
15	Dabale Fole	M	21	51	21
16	Dabale Fole	M	21	51	21
17	Dabale Fole	M	21	51	21
18	Dabale Fole	M	21	51	21
19	Dabale Fole	M	21	51	21
20	Dabale Fole	M	21	51	21
21	Dabale Fole	M	21	51	21
22	Dabale Fole	M	21	51	21
23	Dabale Fole	M	21	51	21
24	Dabale Fole	M	21	51	21
25	Dabale Fole	M	21	51	21
26	Dabale Fole	M	21	51	21
27	Dabale Fole	M	21	51	21
28	Dabale Fole	M	21	51	21
29	Dabale Fole	M	21	51	21
30	Dabale Fole	M	21	51	21
31	Dabale Fole	M	21	51	21
32	Dabale Fole	M	21	51	21
33	Dabale Fole	M	21	51	21
34	Dabale Fole	M	21	51	21
35	Dabale Fole	M	21	51	21
36	Dabale Fole	M	21	51	21
37	Dabale Fole	M	21	51	21
38	Dabale Fole	M	21	51	21
39	Dabale Fole	M	21	51	21
40	Dabale Fole	M	21	51	21
41	Dabale Fole	M	21	51	21
42	Dabale Fole	M	21	51	21



Attendance for Community Consultation					
No	Name	Sex	Woreda	Kebele	Signature
			Bora	Groma	
43	Dani Tole	M	21	21	[Signature]
44	Anyano Dani	M	21	21	[Signature]
45	Fayisa Dabale	M	21	21	[Signature]
46	Pa'ma Dabale	M	21	21	[Signature]
47	Alati Dabale	M	21	21	[Signature]
48	Ximpete Dhala	F	21	21	[Signature]
49	Cruta Ienjiso	M	21	21	[Signature]
50	Matile Borsu	M	21	21	[Signature]
51	Saleu Gromu	F	21	21	[Signature]
52	Milko Gromu	F	21	21	[Signature]
53	Morni Shallo	F	21	21	[Signature]
54	Anyano Milki	M	21	21	[Signature]
55	Crabre Melki	M	21	21	[Signature]
56	Milku Safaye	F	21	21	[Signature]
57	Anyano Trechu	M	21	21	[Signature]
58	Korcho Dabale	M	21	21	[Signature]
59	Dabale Raso	M	21	21	[Signature]
60	Crucha Trechu	M	21	21	[Signature]
61	Abu Ienjiso	M	21	21	[Signature]
62	Cruta Ienjiso	M	21	21	[Signature]
63	Craba Abi	F	21	21	[Signature]
64	Faye Shato	F	21	21	[Signature]
65	Kuto Dabale	M	21	21	[Signature]
66	Abate	21	21	21	[Signature]
67	Abate Roba	21	21	21	[Signature]
68	Roba Koji	21	21	21	[Signature]
69	Masaru Dabale	21	21	21	[Signature]
70	Dabale Dabale	21	21	21	[Signature]
71	Bose Dabale	21	21	21	[Signature]
72	Shugxi Bose	21	21	21	[Signature]
73	Roba Bongori	21	Bora	Groma	[Signature]
74	Tima Roba	21	21	21	[Signature]
75	Fayisa Cruta	21	21	21	[Signature]
76	Cruta HEPHO	21	21	21	[Signature]
77	Cruta Borsu	21	21	21	[Signature]
78	Bastadu Cruta	21	21	21	[Signature]
79	Melko Cruta	21	21	21	[Signature]
80	lanmii Abbe	21	21	21	[Signature]
81	Dhaabi Janma	21	21	21	[Signature]
82	Anyano Abbe	M	21	21	[Signature]
83	Dhaabi Borsu	M	21	21	[Signature]
84	Badmo Koola	M	21	21	[Signature]

