THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF AGRICULTURE

AGRICULTURAL GROWTH PROGRAM II

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

January, 2015
Addis Ababa, Ethiopia

Acronyms

ADLI	Agricultural Development-Led Industrialization
ADPLACs	Agricultural Development Partner's Linkage Advisory Councils
AECDI	Spanish Agency for International Development
AGP	Agricultural Growth Program
AGP-CU	Agricultural Growth Program Coordination Unit
AGP-FCU	Agricultural Growth Program Federal Coordination Unit
AGP-FSC	Agricultural Growth Program Federal Steering Committee
AGP-FTC	Agricultural Growth Program Federal Technical Committee
AGP-RCU	Agricultural Growth Program Regional Coordination Unit
AGP-RSC	Agricultural Growth Program Regional Steering Committee
AGP-RTC	Agricultural Growth Program Regional Technical Committee
AGP-WSC	Agricultural Growth Program Woreda Steering Committee
AGP-WTC	Agricultural Growth Program Woreda Technical Committee
ARCCH	Authority for Research and Conservation of Cultural Heritages
BoA	Bureau of Agriculture
CIGs	Common Interested Groups
CLLP	Community Level Participatory Planning
CRC	Compensation and Resettlement Committee
DA	Development Agent
EA	Environmental Assessment
EIA	Environment Impact Assessment
EMP	Environmental Management Plan
EPLAUA	Environmental Protection, Land Administration and Use
EPA	Environmental Protection Authority
EPE	Environmental Policy of Ethiopia
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ETB	Ethiopian Birr
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FRGs	Farmers' Research and Extension Groups
FTC	Farmer Training Center
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
IAs	Implementing Agencies
IPMP	Integrated Pest Management Plan
KDCs	Kebele Development Committees
MoA	Ministry of Agriculture
NRM	Natural Resources Management
PAD	Project Appraisal Document

PAP	Project Affected Persons
PCDP	Pastoral Community Development Program
PCR	Physical Cultural Resources
PDO	Project Development Objective
PHRD	Plant Health Regulatory Directorate
PIM	Project Implementation Manual
PMP	Pest Management Plan
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SA	Social Assessment
SC	Steering Committee
SLM	Sustainable Land Management
SS-Dam	Sediment Storage Dam
SSI	Small Scale Irrigation
TC	Technical committee
WSC	Woreda Steering Committee
WTC	Woreda Technical Committee
WoA	Woreda Office of Agriculture

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Executive Summary

Introduction

This ESMF is prepared to serve as a safeguard instrument to ensure that the environmental and social impacts of sub-projects, to be financed under the AGP-II are properly considered during subproject identification, planning, designing and implementation of AGP-II. It outlines the principles, rules, guidelines and procedures to be followed during the screening of sub-projects against any potential environmental and social impacts at the community level, preparation of safeguard instruments, review and approval of the safeguard instruments, implementation of mitigation measures identified and planned in the safeguard instruments, and the monitoring of the mitigation measures. The document guides in designing appropriate measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive outcomes.

The main objectives of this ESMF are to: a) establish clear procedures and methodologies for integrating environmental and social issues in planning, review, approval and implementation of subprojects to be financed under AGP-II; b) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to AGP-II subprojects; c) determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; d) establish the budget required to implement the ESMF requirements; and e) provide practical resources for implementing the ESMF.

In parallel to this ESMF, separate Resettlement Policy Framework (RPF) and Social Assessment (SA) were prepared so as to identify and address social impacts and risks. The main objectives of the RPF include to: i) establish the *Agricultural Growth Program-II* (*AGP-II*) resettlement and compensation principles and implementation arrangements; ii) describe the legal and institutional framework underlying Ethiopian approaches for resettlement, compensation and rehabilitation; iii) define the eligibility criteria for identification of project affected persons (PAPs) and entitlements; iv) describe the consultation procedures and participatory approaches involving PAPs and other key stakeholders; and v) provide procedures for filing grievances and resolving disputes. Whereas, The main objectives of the SA include assessing socio-economic factors that require due consideration, identifying vulnerable and underserved groups that may be excluded from the project and affected by the project, assessing the potential social impacts, risks and the mitigation measures. This ESMF will be implemented alongside the RPF and the SA.

This ESMF document is prepared by collecting secondary data at different level; reviewing documents; and having intensive stakeholder consultations at different level from federal implementing agencies through regions, Woreda/district, to Kebeles/community. The ESMF document and the Project Appraisal Document (PAD) of AGP-I, and Program Concept Note of AGP-II were reviewed to gather information on the program components and sub-components, institutional arrangements for the implementation of the program and the ESMF, the anticipated sub-project types, the identified potential environmental and social impacts, the proposed mitigation measures and how these were designed to be implemented vis-à-vis the applicable safeguard policies. The ESMF of the second generation of Sustainable Land Management (SLM-II); and third phase of Pastoral Community Development Program (PCDP-III) were also reviewed. The current ESMF for AGP-I is also taken into account for the preparation of this ESMF. In addition, challenges faced during the AGP-I ESMF implementation, lesson and good practices were taken into account when preparing this ESMF.

A thorough review of the national relevant environmental and social management policies, proclamations, regulations, and guidelines in the country related to AGP-II subprojects were reviewed. The World Bank safeguards policies that are triggered by AGP-II were also reviewed when preparing this ESMF.

Project Description

AGP-II has five major components. Component 1: Agricultural Public Services; Component 2: Agricultural Research; Component 3: Small-Scale Irrigation; Component 4: Agricultural Marketing and Value Chains; and Component 5: Program Management, Capacity Building and Monitoring and Evaluation.

Components 1 to 4 have subprojects which have environmental and social concerns. These subprojects include rehabilitation, upgrading and/or improvements of existing Small Scale Irrigation (SSI); household and micro-irrigation development; establishments of new SSI; implementation of watershed based soil and water conservation subprojects; development/construction of feeder road and foot bridge; construction and modernization of market centers; establishment of warehouses, storage and grading facilities; support the seed supply system; and support to livestock input supply and breed improvement, strengthening animal health services; strengthening soil fertility management services; strengthening plant health services; support the implementation of best agricultural practices; support the promotion and demonstration of agricultural mechanization technologies for smallholder farmers; introduction and promotion of pre- and post-harvest technologies; and Support establishment of integrated agricultural technology demonstration sites/watersheds.

Most of components 3 and 4 subprojects may involve manipulation of landscapes and resources, and or affect the use rights (tenure rights) of people and/or their access rights to resources. These activities may cause some environmental and social impacts. These impacts may include biodiversity loss, natural habitat and cultural resources destruction, soil erosion and sedimentation, restriction of access to resources, flooding, involuntary loss of land and displacement of people, pollution and diseases. Whereas subprojects under component 5 focus on program management, monitoring and evaluation, and may not have any adverse environmental and social risks. This ESMF is prepared to manage and mitigate the negative impacts arising from the first four components.

The following subprojects are not eligible for funding by the project: purchase of land (involving project support); sub-project proposed by fewer than 10 farmers/households; construction of residential accommodation for family or larger group; and commercial activities not related to or directly supporting agriculture including value-addition.

The planning and implementation of AGP-II is planned to be done in a decentralized manner following demand-driven and incentive-(performance) based approach along the value chains. At federal and regional level, MoA and BoA through AGP Coordination Unit (AGP-CUs) are the main responsible bodies to implement the ESMF respectively. Environmental and Social Safeguard Specialists are recruited at federal and regional AGP-CUs for following up the proper and day-to-day implementation of the ESMF. At regional level, the regional Environmental protection, Land Administration and Use Authority (EPLAUA) are responsible for ensuring the implementation of the ESMF. At Woreda level the overall responsibility of supervising the implementation of the ESMF will be that of the Office of EPLAUA. At Kebele level, KDC are responsible to follow up and supervise implementation of the ESMF. The Kebele level Natural

Resources Management (NRM) Development Agent (DA) has the responsibility to ensure the implementation of the ESMF.

Environmental and social management requirements

The selection, planning, design and implementation of the subprojects under AGP have to be consistent with the relevant national environmental and social management requirements as well as the World Bank safeguards policies applicable to the project and its subprojects. In each case, national, regional, Woreda and local institutions to be involved in screening, reviewing and approving subprojects; and they will carry out their respective roles and responsibilities. The responsibilities may include identification of subprojects, screening, conducting environmental and social assessment (ESA), and reviewing the ESA report for ensuring compliance to obligatory requirements under laws and regulations, and issuing approvals for subproject implementation.

The AGP has been assigned as EA Category "B" project given that significant adverse environmental and social impacts are not expected to occur due to the nature and scale of the proposed sub-project activities. The following World Bank Operational Policies were triggered by the AGP subprojects: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP/BP 4.09), Indigenous People (OP/BP 4.10), Physical Cultural Resources (OP/BP 4.11), Involuntary Resettlement (OP/BP 4.12), Safety of Dams (OP/BP 4.37), and 'Projects on International Waterways (OP/BP 7.50).

Subproject Preparation, Approval, Implementation and Reporting

The processes, procedures and institutional arrangements for addressing adverse environmental and social concerns when identifying, preparing, approving and implementing subprojects are defined in generic steps in this ESMF. When demand-driven subprojects are identified and prepared at Kebele level by the communities or groups, these subprojects will be screened at Kebele level by the DAs and KDCs against environmental and social screening checklists prepared for this purpose. Similarly these subprojects will be screened, ESA carried out, reviewed, and approved at Woreda and regional levels.

Quarter and annual report should be prepared at Woreda, regional and federal levels using the institutional arrangements; and the roles and responsibilities identified for the implementation of the ESMF. Regular annual reviews of the implementation of the ESMF for the subprojects are to be carried out by an independent local consultant that is not otherwise involved in the implementation of the project.

Capacity Building, Training, and Technical Assistance

The environmental sustainability of AGP is highly and unavoidably dependent on the capacity of communities, Woreda, Zonal, Regional and Federal implementing agencies (IAs) to carry out the associated design, planning, approval and implementation of subprojects and the ESMF. Ethiopia has a strong environmental and social policies, laws and regulation in environment and natural resource management. However, evidence on the ground still indicates that there are significant shortcomings in the abilities of local, Woreda and regional level AGP-II implementers to correctly monitor, mitigate and manage environmental and social performance of development projects. Ministry of Agriculture, and regional and Woreda EPLAUA have an overall key responsibility of ensuring that the project complies with Ethiopian environmental and social laws,

and the World Bank safeguard policies that are triggered by AGP-II; and that the project adheres to this ESMF. All implementing agencies at Woreda level except Woreda EPLAUA and most of regional level implementing agencies do not have staff directly trained and dedicated for environmental management purposes within these institutions. In many institutions, staffs have been retained for core activities. As a result, the environmental and social issue is handled by staff members not adequately familiar with it. In some cases, environment personnel are present but level of training and technical capacity on environmental and social principles and tools of management is not sufficient.

During AGP-I, a number of training and awareness creation were done at different level on ESMF and other safeguard instruments. In most cases, there was high staff turnover that were trained on environmental and social management. For the successful implementation of the ESMF during AGP-II implementation period, sufficient understanding of the mechanisms for implementing the ESMF will be required by the various stakeholders at different level (especially at Woreda and Kebele level) implementing AGP-II subprojects. Hence capacity building trainings and awareness creation should be provided. The focuses of the trainings include national and the World Bank environmental and social legal, policy and administrative requirements; ESMF process, procedures, and institutional arrangement to implement the ESMF; environmental and social screening of subprojects and ESMP preparation; environmental and social impact assessment methodologies; reporting, monitoring and follow-up of ESMF; Pest management Plan (PMP) including Integrated pest Management (IPM) concept, principle, approaches and applications; and Resettlement Policy Framework (RPF) and Resettlement Action Plan (RAP) preparation, implementation and monitoring. For effective implementation of the ESMF, technical assistance both general and specific, is required at Federal, Region, Zone, Woreda and Local (Kebele) levels.

ESMF Implementation Budget

Detail ESMF implementation budget is estimated for training, technical assistances and environmental and social reviews. For the specific technical assistances, the budget is part of the subproject cost and is not included here. The implementation of the ESMF including capacity building and technical assistance may require an estimated budget of ETB 52.540 million (2.627million USD) for AGP-II.

1. Introduction

1.1. Purpose and Objective of the ESMF

This ESMF is prepared to serve as a safeguard instrument to ensure that the environmental and social impacts of sub-projects, to be financed under AGP-II are properly considered during subproject identification, planning, designing and implementation. 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. The ESMF guides designing of appropriate measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive outcomes.

The objectives of the ESMF are to:

- Establish clear procedures and methodologies for integrating environmental and social issues in planning, review, approval and implementation of subprojects to be financed under AGP-II;
- Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to AGP-II subprojects;
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF;
- Establish the budget required to implement the ESMF; and
- Provide practical resources for implementing the ESMF.

A Resettlement Policy Framework (RPF) is also prepared to address land acquisition and changes to access to livelihood resources, its valuation, entitlements and compensation; dispute resolution and grievance redress procedures in cases of involuntary or voluntary resettlements.

In addition, the key areas of the social concerns are addressed in a Social Assessment (SA) study which is a separate safeguard instrument prepared for AGP-II. The objectives of the SA study were:

- To assess and document key socio-economic factors that require consideration;
- To identify vulnerable and historically underserved groups that may be excluded from the project and be adversely affected as a result, and the necessary impact mitigating measures;
- To assess any potential adverse social impacts of the AGP-II; and
- To recommend in the early stage of project preparation for the appropriate measures to avoid, minimize and mitigate any social impacts as a result of the subproject of AGP-II.

1.2. Methodology of the ESMF preparation

1.2.1 Review of Project Related Documents

AGP-I will be closed in September 2015, and its follow-on program (AGP-II) is being prepared. Since subprojects of the AGP-II are similar to that of AGP-I, it was found appropriate to update the AGP-I ESMF. The ESMF document and the PAD of AGP-I were reviewed to gather information on the project components and sub-components, institutional arrangements for the implementation of the project and the ESMF, the anticipated sub-project types, the identified potential environmental and social impacts, the proposed mitigation measures and how these were designed to be implemented vis-à-vis the applicable safeguard policies. The proposed subprojects for AGP-II were also reviewed to understand the project components and sub-components of AGP-II. The ESMF of the Sustainable Land Management Phase II Project (SLMP-II); and third phase of Pastoral Community Development Program (PCDP-III) were also reviewed. The current ESMF for AGP-I has been used as a base for preparing this ESMF. In this

reviewed version, challenges faced during the AGP-I ESMF implementation, lesson learnt and good practices were included.

1.2.2 Review of Relevant Policies, Laws and Proclamations, Environmental and Social Assessment Guidelines.

1.2.3 A thorough review of the national relevant environmental and social management policies, proclamations, regulations, and guidelines in the country related to AGP-II subprojects were reviewed. This helps to take into account of these policies and laws during identification of sub-projects; environmental and social screening of subprojects; environmental and social management plans (ESMP) preparation; carrying of environmental and social impact assessment (ESIA) if required; and review and approval of these safeguard instruments. In addition, these documents, especially the proclamations and operational guidelines provide important information on environmental and social management issues, the ESIA procedures on different environmental and social impacts of different sectors project; and relevant institutions to prepare, review and approve these safeguard instruments. The guidelines provide not only the applicable procedures and but also suggest appropriate mitigation measures for some anticipated impacts. These national policies, laws, proclamations and guidelines are discussed in section 3 of this ESMF.

A number of consultations were made with AGP-II implementing Agencies and others stakeholders at federal, regional, Woreda and community level with Kebele development Committees (KDCs) and project beneficiaries. See Annex 9 for the summary of consultations, and Annex 10 for the list of people consulted at different levels.

Consultation with Federal Level AGP-II Implementing Agencies

Consultation was held with experts at the Ministry of Agriculture (MoA), Plant Health Regulatory Directorate (PHRD) on the matters related to the experience, best practices, challenges, and future actions on Pest and Pesticide Product management including IPM; and regulatory frameworks and institutional arrangements and capacity related to Pest and Pesticide Product management. In this similar issue, IPM consultant in the FAO, Ethiopian country office was consulted. Consultation was also held with Archaeology and Cultural Heritage Researcher from Authority for Research and Conservation of Cultural Heritages (ARCCH), Cultural Heritage Research Directorate on the matter related to the Physical Cultural Resources that potentially exist in the AGP-II intervention areas. The involvement of this institution at different level in the ESMF implementation during AGP-II was also discussed.

Consultation with Regional Implementing Agencies

Regional level AGP-II stakeholder consultations were held in the AGP-II intervention regions. The participants of the consultations were experts and process owners from bureau of EPLAUA, Bureau of water resources/irrigation development, bureau of road authority, bureau of agriculture, regional AGP-CU, regional plant health clinics, and private enterprises working on feasibility study and design work on small scale irrigation projects.

The experience and best practices in implementing the ESMF during AGP-I, the challenges, and proposed solutions for AGP-II period were discussed in detail in light of the following main points: quality of the safeguard instruments prepared; social safeguard implementation status; implementation of the mitigation

measures, monitoring of the implementation of the mitigation measures, sector integration in implementing the ESMF; pest and pesticide product management; cumulative impact especially related to Small Scale Irrigation (SSI) and Micro-irrigation subprojects and Pest Management; and unaddressed environmental and social issues in AGP-I implementation period that we need to consider in AGP-II. The opinions of the participants especially in addressing the identified gaps and suggested solutions to be considered in AGP-II were captured.

Consultations with Woreda SC and TC members

Woreda AGP SC and TC consultations were held in 22 sample Woredas found in the four AGP interventions regions. The points of discussion were the experience, best practices and challenges when implementing the ESMF in AGP-I period; and the proposed solution to improve the performance of the ESMF during AGP-II giving special attention to: subproject screening and review, quality of safeguard instruments prepared like ESMP and RAP/, implementation of mitigation measures and the monitoring of the same, the positive and negative impact of AGP in general, and unaddressed environmental and social issues in AGP-I implementation period that we need to consider in AGP-2.

Consultations with Kebele Development Committee

Kebele level consultations were held with Kebele Development Committees (KDCs) and project beneficiaries in the 36 sample Kebeles. The opinions of KDCs and project beneficiaries were captured. The points of discussions were the positive and negative impacts of AGP subprojects on the environment and the society; involvement of the local community in subproject identification; involvement of the KDCs in environmental and social screening of subprojects; involvement of the community in environmental and social assessment especially during ESIA of infrastructure/SSI subprojects; and challenges that are faced by the community in their involvement in subproject identification, screening, and environmental and social assessment.

Summaries of the outcomes of the consultations conducted with the various stakeholders are presented in Annex 9 and list of people consulted is given in Annex 10.

2. Project Description

2.1. Purpose and Objective of the Project

The project design builds on the lessons from AGP and the identified investment needs for the sector to achieve the ambitious goals established in the Government's Growth and Transformation Plan (GTP).

The project development objective is to "increase agricultural productivity and commercialization of small holder farmers targeted by the project."

The primary target of the project is small holder farmers, who crop an average area less than 2.3 hectares and live in areas of Ethiopia with the highest potential for agricultural growth. The project direct beneficiaries will be: farmers benefiting from specific trainings at Farmer Training Centers (FTCs) with inputs, farmers in community investment groups, farmers in water user associations, farmers benefiting from small scale irrigation and household irrigation, farmers in Farmer Research Extension Groups, farmers being linked to the market by the project, farmers using animal health services, farmer members of cooperatives supported by the project etc. The intended number of AGP2 beneficiaries will be 4,610,877. In addition, the project will reach a significant number of indirect beneficiaries, as it will improve public agricultural services overall and access to some markets.

The project will also specifically target women farmers with tailor made innovations, activities and technical assistance, as a gap between female and male farmers remains in Ethiopia. Female farm managers produce 23 percent less (in terms of gross value of output) per hectare than male managers on average. Ethiopia's female farmers face multiple challenges that hinder their productivity: differences in both the levels of productive factors used and the returns that these factors generate drive the country's gender gap to a substantial degree. Therefore, the proposed project will emphasize special targeting of women farmers: both female head of household and married females.

2.2. Project Components

Component One: Agricultural Public Services. To increase the access to public agricultural services of smallholder farmers, the project will support:
(a) The identification of local priorities for public services through the establishment, operation and strengthening of Agriculture Development Partners Linkage Advisory Councils (ADPLACs), and linkages to other planning mechanisms including community consultation and local strategic plans.
(b) The strengthening of public service delivery, including for agricultural extension services; livestock production and animal health services; crop production and plant health services; natural resource management services; soil fertility management services; and agricultural mechanization. This would include supporting small scale works and equipment (including for mobility of service providers) for local service providers (Farmer Training Centers (FTCs); Animal Health Posts); promotion and demonstration of identified priority technologies at FTC and model farmers, including for agricultural mechanization; support for regional level facilities (soil laboratories, etc.); training and human capacity support for service providers (Subject Matter Specialists, Development Agents, Animal Health Workers, etc.).

(c) Support the scaling up of identified "best" practice following the government's strategy, including the identification (through a community consultation process) of local good practices, validation and verification of local practices, and extension though FTCs and model farmers. In this regard, the project would align and receive additional support through the proposed Netherlands-financed CASCAPE project. Screening of technologies will include systematic assessment of nutrition, gender-

impact and contribution to climate-smart agriculture (including tillage, soil nutrients etc.).

Component Two: Agricultural Research. To increase the supply of demand driven agricultural technologies which directly link to the other components, the project will support:

(a) the release of technologies to the agricultural extension system, through: i) the identification of prioritized technologies, for which the National Agricultural Research System has completed research station validation, and which are directly linked to the project objectives identified through local planning processes (Component 1); support small scale irrigation (Component 3); and/or support the commercialization of selected value chains (Component 4); and ii) field testing new technologies through Farmer Research and Extension Groups. Screening of technologies will include systematic assessment of nutrition, gender-impact and contribution to climate-smart agriculture (including tillage, soil nutrients etc.).

(b) The multiplication of improved technologies i.e. breeder and pre-basic seeds for production (Component 1&3) and marketing (Component 4); machinery/implement prototypes (Component 1);

(c) Capacity building for the agricultural research system to enable both national and regional research centers to effectively respond to emerging research needs, including for increased focus on high value crops.

Component Three: Small-scale Irrigation. To increase the access to and efficient utilization of irrigation water of small holder farmers, the project will support:

(a) Increased availability of irrigated water through i) the rehabilitation, upgrading and/or improvement of existing Small-scale Irrigation Schemes; ii) establishment of new SSI systems integrated with access roads where necessary; and iii) household/micro irrigation systems.

(b) Improved water management services through establishing and/or strengthening Irrigation Water Users Associations

Component Four: Agriculture marketing and value chains. To commercialize small holder farmers through market access and efficiency of input and output markets, the project would support:

(a) The availability of agricultural inputs and specifically for seed through support to seed multiplication and the scale up of Direct Seed Marketing / community based seed production.

(b) The strengthening of formal and informal farmer organizations, including formal farmer organizations (Unions, Primary Cooperatives) and informal, commercially oriented farmer groups (informal groups establishment would be focused on women and youth groups). The project would support business plan preparation and implementation, including through the provision of matching grants to qualifying groups. Service providers, including the Cooperative Agency, would receive capacity support. Improved access to credit (both rural savings and credit cooperatives and Micro-finance Institutions) would be facilitated.

(c) The strengthening of selected livestock and crop value chains (to be confirmed, though likely to include those currently supported under AGP (coffee, sesame, maize, wheat, honey, chickpea, meat (shoat and cattle), milk, with the possible addition of horticulture and poultry), through a range of activities including technical assistance to cooperatives and market buyers (including processors and exporters), linkages between VC participants, including from importing markets (such as participation in trade shows); competitive matching grants etc. Note that this sub-component is likely to be financed through a parallel financing mechanism funded by USAID.

(d) Market infrastructure development and management, including (i) construction and modernized management of public market centers at woreda level; (ii) where clear rationale and exit strategy for public sector investment is demonstrated, to support the construction of warehouses, storage and grading facilities; and (iii) foot bridges which address critical market access bottlenecks for communities.

Component Five: Program Management, Capacity Building and Monitoring and Evaluation. To ensure project implementation, the effective monitoring and evaluation of results and a consistent and effective approach to capacity development, the project would support:

(a) Program management and coordination, including (i) financing the staffing of federal, regional and woreda coordination units and Steering Committees; (ii) procurement, financial management and safeguard functions; and (iii) goods and equipment to support project management and implementation.

(b) Monitoring, evaluation and learning, including (i) regular monitoring of project inputs and outputs; (ii) participatory monitoring and feedback; (iii) baseline followed by mid-term and end of project impact assessments; and (iv) internal learning, Knowledge sharing and communication.

(c) Capacity Development Support Facility, which will provide technical support to all human capacity building, throughout the project in order to (i) improve the quality of capacity development interventions; and (ii) strengthen the institutional capacity of implementing agencies. Note that this sub-component would be financed through a parallel financing provided by Canada DFATD.

Types of subprojects, with relevance to safeguards, are listed in the Table 2.1 below.

Table 2.1: Type of subprojects that will be financed by AGP-II

Subproject Type/component	Major Activities of the Subprojects
Component One: Agricultural Public Services	• Conducting demonstration on on-farm and FTC, • Community based forage & food seed production, • Strengthening soil testing laboratories with chemicals/reagents, • Strengthening soil fertility management services, • Strengthening animal health clinics, posts, and regional animal health laboratories with laboratory chemicals/reagents, and equipment, • Production of lime, • Promotion of on-farm processing and value addition • Support livestock breed improvement, • Support to Small-Scale Animal husbandry subprojects (Milk production and processing (dairy processing), Poultry production, Aquaculture, • Establishment of community nurseries, • Introduction and demonstration of pre and post-harvest technology for crop and forage, • Introduction and demonstration of appropriate technologies for livestock development sector.
Component Two: Agricultural Research	• Support technology demonstration and popularization, • Support promotion of agricultural technology based business incubation, • Support establishment of integrated agricultural technology demonstration sites/watershed (Enhanced National Agricultural Technology Transfer/ENATT project), • Support the establishment and strengthen of farmers' research and Extension groups (FRGs), and • Support ICT based research-extension linkage.

Subproject Type/component	Major Activities of the Subprojects
Component Three: Small-scale irrigation	• Rehabilitation and/or improvement of existing traditional SSI & micro irrigation schemes, • Rehabilitation and/or improvement of existing modern SSI & micro irrigation schemes, • Establishment of new SSI & micro irrigation schemes, • Construction of ponds, tanks, & hand dug well, • Construction of small dam, • Establishment of ground water recharge structures, • Supply of portable diesel irrigation pumps, mechanical pumps & family drip irrigation system; • Construction of feeder road and foot bridge • Gully rehabilitation, • Area closure, • Plantation of multipurpose trees, • Construction of different soil & water conservation physical structures, • Construction of groundwater recharge structure, • Construction of check dam, SS-Dam, gabions, reshaping and cultivating gully with multipurpose perennial trees, shrubs, and grasses.
Component Four: Agricultural Marketing and Value Chains	• Support the seed supply system, • Support to livestock input supply and breed improvement, and strengthen input regulation and certification. • Strengthening of formal farmers organizations (Unions, Primary cooperatives), • Establishing and strengthening of informal farmers group (CIGs), strengthening of agencies supporting farmers organizations • Enhance agribusiness development, • Construction and modernization of market centers, and • Support the establishment of warehouses, storage and grading facilities.

The following subprojects are not eligible for funding by the project.

- Purchase of land (involving project support);
- Sub-project proposed by fewer than 10 farmers/households;
- Construction of residential accommodation for family or larger group; and
- Commercial activities not related to or directly supporting agriculture including value-addition.

2.3. Project Target Areas

The AGP-II intervention areas will focus on the existing high potential Woredas in Oromia, Amhara, Southern Nations, Nationalities and People's (SNNP); Tigray, Benishangul Gumuz, Gambella, Harari, and Dire Dawa regional states. The number of Woredas will be increased from 96 to 157 through inclusion of additional 61 high potential Woredas selected from the eight regions. During the preparation of this ESMF, the additional 61 Woredas were not identified. Figure 2.1 below shows the existing AGP 96 Woredas.

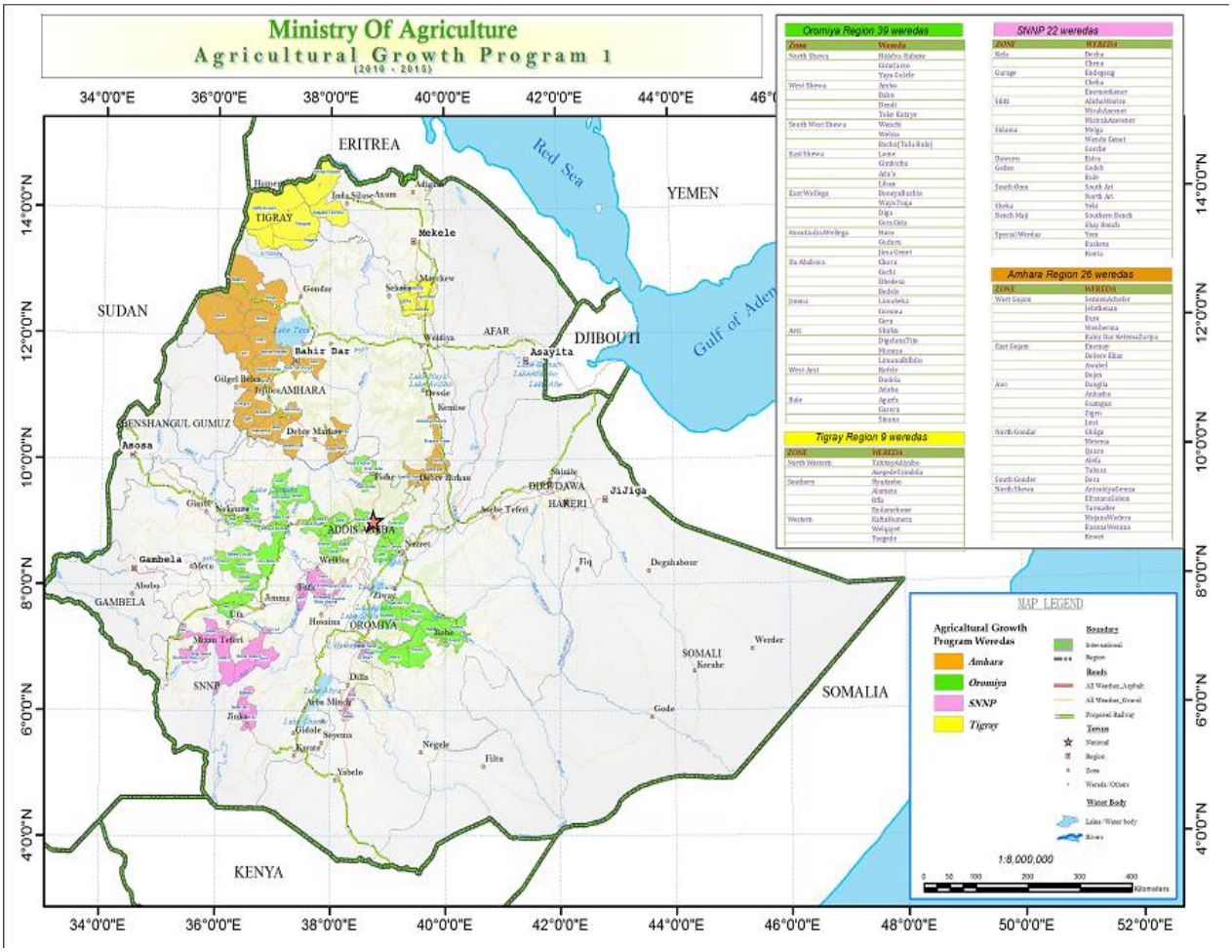

Fig.2. 1: AGP intervention Woredas in the four existing AGP-I regions

2.4. Environmental and Social Context and Baseline Conditions

AGP-II will be implemented in different agro-ecological zones and eight national regional states characterized by different regimes of rainfall, temperature, growing periods, socioeconomic and biophysical environments. The environmental and social baseline condition of AGP-II intervention regions is briefly described below.

2.4.1. Physical Environment

Relief

The relief of AGP-II intervention regions is characterized by diverse relief including plains, gorges, plateaus, hills and mountains.

Climate

Lowlands AGP-II intervention regions experience high temperature and low precipitation; whereas, highlands experience amiable temperature and ample rainfall. In general, mean annual temperature in the

regions varies from less than 10^0c in high altitudes (cool) to over 30^0c in tropical lowlands. Generally, the regions experience annual temperature ranging from 10^0C to 30^0C, with mean annual temperature of 19^0C, where the highlands and mountainous areas in the regions receive lowest mean annual temperature, while lowlands and valley bottoms get highest mean annual temperature records. The amount, duration and intensity of rainfall in AGP-II regions vary considerably. The annual rainfall in the regions ranges from 303-2553mm where the highest rainfall record is observed in the highland areas while the lowest precipitation amount is recorded in the lowland parts of the regions.

Soil and Geology

Though there are a number of soil types found in the AGP-II intervention regions, the major soil types includes Nitosols, Vertisols, Cambisols, Acrisols, Luvisols, Lithosols, Aluvisols, Arenosols and Regolsols. In general, most of the soils of have good agricultural potentials. However, soils on the highlands of the regions have been subjected to serious erosion due to human activities (deforestation, over cultivation, poor farming practices, etc). The Precambrian, Palaeozoic, Mesozoic, and Cenozoic rocks are the three main geologic formation found in the AGP-II regions. Proterozoic rock formation is also found in the Tigray regional state.

Water Resources (River Basin and Lakes)

AGP-II intervention regions have abundant surface and ground water resources potential. Large areas of the regions are drained by many major rivers, streams and lake basins. The main river basins in the AGP-II regions includes Nile/Abay/Basin, Baro Basin, Gibe/Omo/Basin, Awash Basin, Wabi Shebele Basin, Genale basin, Rift Valley Basin, and Segan Basin all found in Oromia region; Abay River / Blue Nile/, Tekeze River, Jema river and Awash River basins which are found in Amhara region; Baro-Akobo, Omo-Gibe, Genale and Rift Valley drainage basins and the Awash basin found in SNNPR regions; and Tekeze, Mereb and Denakil basin found in Tigray region. There are also a number of sub-basins and tributary rivers. There are a number lakes found in the AGP-II intervention areas like Lake Tana, Zengena and Haik in Amhara region; lake Abaya-the largest rift valley lake in Ethiopia, Chamo, Awassa, and Rudolf in SNNPR; Ashengie lake in Tigray region; and Ziway/Dembel, Abijata, Shalla, Langano, Beseka, Abaya, Istifani and Awasa (the last three lakes shared with Oromia region) found in SNNPR; lake Chukala, Hora (Kilole), Bishoftu (Babogeya), Hora Oda (Arsede), Megerisa, Wenchi and Dendi in Oromia region.

In addition to terrestrial water (rivers and lakes), the regions have also high potential of underground water. Particularly Bacho Plains (in West and South West Shewa of Oromia region) and Rift Valley areas (East Shewa and Borena of Oromia region) have huge underground water potential. Bacho plains and Rift Valley are the second and third largest, respectively at national level regarding their underground water reserve.

2.4.2. Biological Environment

Forests

Though AGP-II will be implemented in mainly in agricultural lands. there are priority forest areas, , plantation forests, bushes and shrubs found in these AGP-II intervention regions. Out of the 58 National Forest Priority Areas of the Country, 49 are found in Oromia (some in AGP-II intervention areas and some not). Their areal coverage accounts for about 8.1% of the total surface area of the Region. The region has forest of rich biodiversity like Harena (Bale), Chilimo (West Shewa,Dendi woreda), Yayu (Ilu Abba Bor), Dindin (West Wellega), Anfarara (Guji), Munessa (West Arsi) and Menagesha Suba (Finfinne Surrounding, Wolmera woreda) forests.

Keffa, Bench Maji and Sheka zones forest are among the few remnant wet afromontane forests of Ethiopia.

The natural forest in Amhara Region is heavily depleted and degraded by intensive human interference, mainly for agricultural purpose and for energy (firewood) production. Currently less than 10% of the total estimated forest area is considered to be natural forest in the Region. To conserve and sustainably utilize the resource the region identified 17 priority forest areas which comprise both natural and plantation that are used for source of seed and commercial. Among these, 3 (Wof Washa in North Shewa, Illa in Guanga Woreda, and Yegodena in Awabel woreda) of them are found in AGP-II intervention Woredas.

Tigray region has 6 state forests. These are Wujig-Mahgo-Waren natural forest (in Southern zone); Hugumburda-Gratkahassu (Southern), Hirmi (North Eastern), Waldiba (North Western), Asimba (Eastern) and Desia (Eastern zone).

Parks

In the eight AGP-II intervention regions, there are a number of national parks, regional parks, sanctuaries, wildlife reserve areas, and controlled hunting areas. In Oromia region there are three national parks (Bale Mountains, Awash and Abijatta Shalla) and regional (Dhera Zilfekar), five sanctuaries (Sankalle, Yabello, Babile, Erer-fafen and Kuni Muktar) and three wildlife reserves (Awash, Bale and Chelbi) and many controlled hunting areas that hosted mammals, birds, grazers, browsers and hunters. Tigray region has one national park which is Kafta-Sheraro national park (in Western and North Western zones). Siemen Mountains National Park and one regional park (Halatish) are found in Amhara regional state. SNNPR encompasses 5 national parks (Mago National Park, Nechsar National Park, Omo National Park, Chebera Churchura, and Maze Park), 2 wild life reserves (Chewbahir, and Tana) and 6 (Akobo, Boyo Swamp, Maze sheleko, omo West, Murle, and segen) controlled hunting areas. In Gambella region, Gambella National Park is found. It is the largest protected area in Ethiopia.

Flora

The most common tree/shrub species found in the above parks and forests are: *Croton macrostachyus, Phonix reclinata, Vepris dainelli, Sapium ellepticum, Pouteria adolfifriedericii, Chionanthus mildbraedii, Draceaena steudneri, Schefflera volkensii,Milletia ferruginea, Chionanthus mildbraedii, Macaranga capensis,* and *Psychotria orophila, Ole Africana, Juniperous procera, Podocarpus Falcatus, Acacia species, HygeniaAabyssinica, Ximenia American and Ficus.*

Endemic plants found especially in the Bonga, Bogineda and Mankira forest of the SNNPR include: *Erythrina brucei, Milletia ferruginea, Solanecio gigas, Tiliacora troupinii Menispermaceae, Vepris dainelli, Aframomum corrorima, Brillantaisia grotanellii, Satureja paradoxa , Vernonia tewoldei, Mikaniopsis clematoides, Lippia adoensis, Clematis longicauda, Pilea bambuseti ssp aethiopica, Pentas tenuis, Dorstenia soerensenii, Phyllanthus limmuensis, and Cyrtorchis ehrythraeae.*

Fauna

In Oromia region, Awash National Park alone has 400 species of birds and 46 species of animals like lion, Vervet Monkey, Beissa Oryx, Greater Kudu, Lesser Kudu, Swayne's Hartebeest, Hamadryas Baboon, Anubis Baboon, Waterbuck and Salt's Dik-dik. Bale Mountains National Park, has 200 bird species (like Wattled Ibis, Black-winged, Lovebird, Wattled Crane, Rouget's Rail, etc) and 46 mammals including Mt. Nyala, Red Fox, Menelik's Bushbuck, Duiker, Warthog, Leopard, Bohor Reedbuck, Serval Cat, Colobus Monkey and Anubis Baboon. And, Abijata-Shalla Lakes National Park hosts 367 different species of birds (like Great White Pelicans, Greater and Lesser Flamingos and Sacred Ibis) and 31 species of mammals (spotted Hyena, Golden and Black Backed Jackals, Olive Baboon, Grant's gazelle, etc). In addition, there are elephants, cheetahs, buffalo, Oribi Warthog, Bohor Reedbuck, Civet Cat and

various birds and other wildlife species in sanctuaries, reserves and controlled hunting areas in the Region.

The major wild animals found in the national parks, wild life reserves, controlled hunting areas and in the water bodies of the SNNPR includes Nubian Giraffe, Elephant, Buffalo, Black Rhinoceros, Hippopotamus, Zebera, Swayn's Hartbeast (which is endemic), Hartebeest, Eland, Defarsa(waterbuck), Oryx, Lessser kudu, Grants Gazelle, Lion, Cheetah, Warthog, Aardvark, Civet, Caracal, Aardwolf, Hyna, Colobus Monkey, D-Brazza's monkey, ostrich, Crocodile and other reptiles, Amphibians and Bird species.

In Amhara region, Walia Ibex, Simen Fox, Gelada Baboons and different species of birds, most of which are endemic to Ethiopia are found in Semien Mountain National Park. Endangered bird species in Amahara region include Harwood, Francolin and Ostrich. Similarly, In Tigray regions, there are a number of flora and fauna found in the parks, water bodies and forests. The Gambella National Parks help protect the diverse and abundant wildlife, particularly the thousands of White eared Kob that migrated to and from the park each year.

2.4.3. Socio-economic conditions

The major economic sector for existence of the people of the AGP-II regions, like that of other regions in the country, is agriculture in majority being mixed farming. That is the farmers exercise both crop farming and animal husbandry at the same time. Ox farming is implemented by the smallholders covering the majority of the farmers. Livestock serves as a source of manure and fuel, pay land tax, fertilizers and as a saving to buffer bleak seasons of food/seed shortage. Due to the high complexity and strong inter-linkage between crop production and livestock tending, it is difficult to consider the two livelihoods separately. Over 90% of the people of AGP-II intervention regions live in the rural area and agriculture has been remained the source of livelihood for the overwhelming majority of the people of the regions.

Livestock plays a significant role in the economy of the country as well as the regions in general and the farmers and households in particular. In general, they provide food (milk, meat, egg, hides and skins, etc), draught power for cultivation, serve as a means of transportation and as a saving or hoarding. They are also kept for prestige as an indication of social status and wealth in the society.

3. Administrative, Policy and Regulatory Framework

3.1. Ethiopian Environmental and Social Legislation

3.1.1. The FDRE Constitution

The Federal Democratic Republic of Ethiopia constitution issued in August 1995 has several provisions, which have direct policy, legal and institutional relevance for the appropriate implementation of environmental protection and rehabilitation action plans to avoid, mitigate or compensate the adverse effects of development actions. Article 40 of the constitution proclaims that land and natural resources are commonly owned by the people of Ethiopia and shall not be subject to sale or other means of exchange. It stipulates the rights of Ethiopian farmers and pastoralists to obtain land for cultivation and for free grazing without payment and the protection against eviction from their possession.

In articles 43, 44 and 92 referring the rights for development and environmental obligations, the following are important provisions of the constitution:

- People have the right to improved living standards and to sustainable development;
- 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;
- People have the right to commensurate monetary or alternative means of compensation, including relocation with adequate state assistance for persons who have been displaced or whose livelihoods have been adversely affected as a result of State programs;
- The people and the state have common responsibility/obligation to protect the environment,
- The state endeavors to ensure all people live in a clean and healthy environment; and
- The state shall ensure that the design and implementation of development projects will not damage or destroy the environment.

3.1.2. Regional States Constitutions

Regional states have their own constitutions upholding the federal constitution in its entirety and constituting their regional particulars. All the regional state constitutions have addressed land and natural resources management and environmental protection. The regional states constitutions state that:

- The regional governments are entrusted to administer land and natural resources in the name of the people and deploy for the common benefit of the same;
- The regional governments and all citizens of the regions are responsible for the conservation of natural resources and the environment; and
- Concerned communities shall be given opportunity to express their opinions in the formulation and implementation of policies in relation to the environment.

3.1.3. Environmental Policy of Ethiopia

The environmental policy of Ethiopia, approved in 1997, 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 policy lists specific objectives encompassing wide range of environmental issues to be addressed through the adoption of the policy. It also provides overarching environmental guiding principles to be adopted to harmonize the environmental elements in sectoral, cross-sectoral and other policies. The policy clearly outlined the sectoral environmental policies, relevant to environmental management among others are: (i) Soil Husbandry and

Sustainable Agriculture; (ii) Forests, Woodlands and Trees; (iii) Genetic, Species and Ecosystem Biodiversity; (iv) Water Resources; (v) Energy Resources; (vi) Human Settlement, Urban Environment and Environmental Health; and (vii) ESIA.

3.1.4. Biodiversity Conservation and Research Policy

The biodiversity policy was approved in 1998 and it provides policy guidance towards the effective conservation, rational development and sustainable utilization of the country's biodiversity. The policy objectives accentuate public participation in biodiversity conservation, development and utilization, and also ensure that communities share from the benefit accrued from the utilization of the genetic resources and their traditional knowledge. The policy consists of comprehensive provisions on the conservation and sustainable utilization of biodiversity, and it underlines the requirements for implementers to adopt during planning and operational phase of projects and for those projects engaged in biological resource utilization to follow ESIA procedures.

3.1.5. Ethiopian Water Resources Management Policy (1999)

The overall goal of the 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 socioeconomic development on sustainable basis. The policy aims to ensure access to water for everyone fairly and in a sustainable manner, protect water resources and sources, and promote cooperation for the management of river basins.

3.1.6. Proclamations and Environmental Guidelines

3.1.6.1. Proclamations

Environmental Protection Organs Establishment Proclamation, No. 295/2002

The proclamation was made to re-establish the federal Environmental Protection Authority (EPA), to establish Sectoral Environmental Units and Regional Environmental Protection Agencies. The authority is recently restructures as Ministry of Environment and Forest. The former FEPA was established to formulate policies, strategies, laws and standards, which foster social and economic development in a manner that enhance the welfare of humans and the safety of the environment, sustainable development projects and to spearhead in ensuring the effectiveness of the process of their implementation.

The former *Federal Environmental Protection Authority*, among others, has the powers and duties to:

- Coordinate measures to ensure that the environmental objectives provided under the Constitution and the basic principles set out in the environmental Policy of Ethiopia are realized;
- Prepare, review and update, or as necessary, cause the preparation of environmental policies strategies and laws in consultation with the competent agencies, other concerned organs and the public at large and upon approval, monitor and enforce their implementation;
- Liaise with competent agencies in the field of environmental protection and rehabilitation and support them in capacity development;
- Establish a system for environmental impact assessment of public and private projects, as well as social and economic development policies, strategies, laws, and programs; and
- Provide advice and support to regions regarding the management and protection of the environment.

Sectoral Environmental Units (SEUs): Every competent agency (sectoral) is required by the Proclamation No. 295/2002 to establish or designate an environmental unit that shall be responsible for coordination and follow up so that the activities of the competent agency are in harmony with this Proclamation and with other environmental protection requirements. Accordingly, some sectoral agencies (e.g., Ministry of Agriculture) have now at least environmentalist to deal with environmental issues. Other ministries like Ministry of Mine, Ethiopian Road Authority, and others have environmental unit for the same purpose.

Regional Environmental Protection Agencies (REPAs): the Proclamation No. 295/2002 decrees that each national regional state shall establish an independent regional environmental agency or designate an existing agency that shall, based on the Ethiopian Environmental Policy and Conservation Strategy and ensuring public participation in the decision making process. REPAs are responsible for:

- Coordinating the formulation, implementation, review and revision of regional conservation strategies;,
- Environmental monitoring, protection and regulation;
- Ensuring the implementation of federal environmental standards or, as may be appropriate, and issue and implement their own no less stringent standards; and
- Preparing reports on the respective state of the environment and sustainable development of their respective states and submits the same to the Authority.

Environmental Impact Assessment Proclamation, NO. 299/2002

The Environmental Impact Assessment Proclamation was decreed in December, 2002 in order to make ESIA a mandatory procedure for projects to be undertaken by the government, public or private entities that require environmental and social impact analysis. The Proclamation elaborates on considerations with respect to the assessment of positive and negative impacts and states that 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 context, duration, reversibility or irreversibility or other related effects of a project. Based on directives or guidelines pursuant to this proclamation, projects will be categorized as:

- Projects that are not likely to have negative impacts, and thus do not require environmental impact assessment; and
- Projects those are likely to have negative impacts and thus require environmental impact assessment.

As per the procedures in the proclamation, a proponent is required to undertake a timely environmental and social impact assessment - ESIA, assess the possible adverse impacts of the proposed project, and propose the means of mitigation, and shall submit the study report to the relevant body (Federal or regional EPA) for review and decision. It is also a requirement that ESIA reports be prepared by an expert that meet the requirements specified under any directive issued by the Authority (regional/federal).

Jurisdictions in the Proclamation: The regional environmental agency in each region shall be responsible for the evaluation and authorization or any environmental impact study report and the monitoring of its implementation if the project is not subject to licensing, execution and supervision by a federal agency and if it is unlikely to produce trans-regional impact.

Rural land Administration and Use Proclamation, No.456/2005

The main aim of the Proclamation is to conserve and develop natural resources in rural areas by promoting sustainable land use practices. In order to encourage farmers and pastoralists to implement measures to guard against soil erosion, the Proclamation introduces a Rural Land Holding Certificate, which provides a level of security of tenure. The MoA is tasked with implementing the Proclamation by providing support and co-coordinating the activities of the regional governments. Regional governments have an obligation to establish a competent organization to implement the rural land administration and land use law. Accordingly the regional and Woreda/district Environmental Protection, Land Administration and Use Authority (EPLAUA) are responsible for rural land administration. The Proclamation states that if a land, that has already been registered, is to be acquired for public works or for investment, compensation commensurate with the improvements made to the land shall be paid to the land use holder or substitute land shall be offered. The Proclamation imposes restrictions on the use of various categories of land, for example wetland areas, steep slopes, land dissected by gullies, etc.

Proclamation on Expropriation of Landholdings for Public Purposes and Payment of Compensation: Proclamation 455/2005

Prior to this proclamation, no specific legal framework existed relating to expropriation and compensation. As a result, there have been serious shortcomings in the processes associated with land expropriation, resettlement and associated compensation payments in Ethiopia. The proclamation address issues related to *Public domain Entitlement, Property laws, Land asset classification and valuation, customary laws, Procedures for expropriation, Procedures for grievance redress.* The proclamation establishes the legal principles and framework for expropriation and compensation.

Regulation for the payment of Compensation for property Situated on Landholdings Expropriated for public purposes: Regulation No. 135/2007

This regulation describes the detail implementation procedures in when settling issues related to Public domain Entitlement, Property laws, Land asset classification and valuation, customary laws, Procedures for expropriation, Procedures for grievance redress. The regulation *provides the procedures for application of Proclamation No 455/2005.*

Environmental Pollution Control Proclamation, No. 300/2002

The aim of the proclamation is to control and manage possible causes of environmental pollution from hazardous substances, waste and any other forms of pollutants that pose serious environmental, social and health threats. The proclamation has important provisions on environmental standards, inspection procedures, offences and penalties, etc…. In its provision to control pollution, the proclamation states that, among others:

- No person shall pollute or cause any other person to pollute the environment by violating the relevant environmental standards,
- The Authority or the relevant Regional environmental agency may take an administrative or legal measure against a person who, in violation of law, releases any pollutant to the environment.

Solid Waste Management Proclamation, No. 513/2007

This proclamation aims to promote community participation to prevent adverse impacts and enhance benefits resulting from solid waste management. It provides for preparation of solid waste management action plans by urban local governments.

Ethiopian Water Resources Management Proclamation, No. 197/2000

The proclamation is decreed to ensure that the water resources of the country are protected and utilized for the highest social and economic benefits of the people of Ethiopia, to follow up and supervise that they are duly conserved, ensure that harmful effects of water are prevented, and that the management of water resources is carried out properly. It proclaims that all water resources of the country are the common property of the Ethiopian people and the state. It has provisions on general principles of water use and management, inventory of water resources, professional engagement in water resource management and supply. Among other articles, the proclamation clearly indicates the requirements on water bank management and prevention of harmful effects on water resources in the articles 24 and 25 of the proclamation.

The supervising body (the Ministry Water, Irrigation and Energy), in collaboration and in consultation with the appropriate public body may:

- Delimit the boundaries of the banks of certain water bodies;
- Prohibit clearing and cutting trees or vegetation and construction of residential houses within the delimited banks of water bodies;
- The appropriate public bodies shall, before allowing or causing the founding of towns or villages, request the supervising body for technical advice in order to prevent or avoid damages, adverse impacts or accidents which may occur as a result of floods and other factors related to water.

Pesticide Registration and Control Proclamation: Proclamation No. 674/2010

This Proclamation:

- Covers agricultural, household, public health, and industrial pesticides;
- Provides registration and control responsibilities to the Ministry of Agriculture;
- Seeks to promote safer pesticide handling and use in the country;
- Requires that all pesticides should be registered on the basis of demonstrated product effectiveness and safety for humans, non-target organisms and the environment;
- Prohibits importation of highly hazardous, severally restricted or banned pesticides (including most Organochlorines); and
- Obliges that all pesticides must display labels that meet specific Ministry of Agriculture label requirements.

3.1.6.2. Environmental and Social impact Assessment Guidelines and Directives

The former FEPA has published series of environmental and social impact assessment guidelines for the different sectors outlining the key issues, principles, procedures and processes to be adopted and adhered to avoid and/or mitigate potentially negative environmental and social impacts during project planning, implementation and operation by government, public and private entities. Some of the guidelines are generic and applicable in different sectors and there are also sector specific guidelines prepared for key environmental and social issues to adhere during the ESIA analysis in those specific sectors.

Environmental Impact Assessment Guideline, May 2000

The guideline provides the policy and legislative framework, the general ESIA process and key sectoral environmental issues, standards and recommendations for environmental management in key sectors such as agriculture, industry, transport, tannery, dams and reservoirs, mining, textiles, irrigation, hydropower and resettlement projects.

Environmental and Social Management Plan Preparation Guideline, Nov. 2004

The guideline provides the essential components to be covered in any environmental management plan (e.g., identified impacts, mitigation measures, monitoring, capacity building, etc….) and structured formats for mitigation measures, monitoring and institutional arrangements. Similar guidelines for the different sectors include the following:

- *Environmental and Social Impact Assessment Guidelines for Dams and Reservoirs, 2004*
- *Environmental Impact Assessment Guideline for Fertilizer, 2004*
- *Guidelines for Social, Environmental and Ecological Impact Assessment and Environmental Hygiene in Settlement Areas, 2004*
- *Environmental Impact Assessment Guidelines on Irrigation, 2004*
- *Integrated Environmental and Social Impact Assessment Guidelines Livestock and Rangeland Management, 2004*
- *Environmental Impact Assessment Guideline For Mineral and Petroleum Operation Projects, December 2003*
- *Environmental Impact Assessment Guideline On Pesticides, May 2004*
- *Environmental Impact Assessment Guidelines on Road and Railway, 2004*
  Environmental Impact Assessment Guidelines on Forestry, 2004

A Directive Issued to Determine Projects Subject To Environmental Impact Assessment, Directive No.1/ 2008

The directive was issued to identify and list out those investment projects subject to mandatory Environmental Impact Assessment. The regions are entitled to issue similar directive to their own specific cases based on this directives. Extensive list of project types requiring ESIA are provided in this directive.

3.1.7. Relevant and Applicable International Conventions Ratified by Ethiopia

Ethiopia has ratified several international/multilateral environmental conventions and many of the principles and provisions in those conventions have been well addressed in the national environmental policies and regulations. Some of these conventions include the following:

- *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Done at Aarhus, Denmark, On 25 June 1998*
- *Cartagena Protocol on*Bio-Safety to the Convention on Biological Diversity*
- *Convention on Biological Diversity, Rio, 5 June, 1992*
- *Kyoto Protocol to the United Nations Framework Convention on Climate Change*
- *United Nations Convention to Combat Desertification*
- *UN Framework Convention on Climate Change*
- *Convention for the Protection of the World Cultural and Natural Heritage Paris, 23 November 1972*

3.2. World Bank Safeguard Policies

The ESMF will be required to comply with not only the relevant national policy and legal frameworks but also with the applicable environmental and social safeguard policies of the World Bank. In this section, the Bank's applicable environmental and social safeguards policies and their applicability are discussed.

In preparing this ESMF, a consideration of the type of future investments planned vis-a-vis the baseline data presented in section 2.4 above and the requirements of the Bank Safeguard policies, has led to the determination that the following Bank policies are triggered by AGP-II.

- *Environmental Assessment (OP/BP 4.01)*
- *Natural Habitats (OP/BP 4.04)*
- *Pest Management (OP/BP 4.09)*
- *Indigenous People (OP/BP 4.10)*
- *Physical Cultural Resources (OP/BP 4.11)*
- *Involuntary Resettlement (OP/BP 4.12)*
- *Safety of Dams (OP/BP 4.37)*
- *Projects on International Waterways (OP/BP 7.50)*

The World Bank's operational policies i.e. Environmental Assessment, Pest Management, (OP/BP 4.10), Physical and Cultural Resources, Involuntary Resettlement, and safety of dam are addressed at subproject level whereas the international waterways addressed at the project level. Brief descriptions of each of the World Bank safeguard operational policies that are triggered by AGP-II are given below.

Environmental Assessment (OP/BP 4.01): This policy requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed investments under the AGP-II. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and trans-boundary and global environmental aspects.

According to the World Bank, projects are classified into three categories (A, B, and C) based on the type, location, sensitivity and potential environmental impacts. This classification of projects also coincides with the Ethiopian federal EPA but naming differently as schedule 1, 2 and 3. The definition of projects for categorization for the World Bank and the ministry of environment and forest, formerly known as federal EPA of Ethiopia, is almost the same. Environmental assessment should be conducted for projects which fall under the World Bank category A & B; and also for the schedule 1&2 of the Ministry of Environment and Forest of Ethiopia.

Category 'A' projects: The project is likely to have adverse environmental and social impacts that are diverse, sensitive and unprecedented affecting broader area than implementation sites. A full ESIA is always required for projects that are in this category, and for which impacts are expected to be ′adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental quantities; and significant involuntary displacement of people or other significant social disturbances.

Category 'B' Projects: The potential environmental impacts on humans and sensitive areas (wetlands, forests, natural habitats, etc.) are less adverse, site specific, few if any are irreversible. Even though an ESIA is not always required, some environmental analysis is necessary and some form of environmental management plan needs to be prepared with recommended measures to prevent, minimize, mitigate or compensate for adverse impacts. Typical projects include renewable energy; irrigation and drainage

(small-scale), rural water supply and sanitation, watershed management or rehabilitation projects, rehabilitation, maintenance, or upgrading of projects (small-scale), rather than new construction.

Category 'C' Projects: There are no or minimal adverse environmental and social impacts. Such projects may not need ESIA other than screening. Typical projects include education, family planning, health, nutrition, institutional development, technical assistance, and most human resource projects. Such projects will not directly cause disturbance of the physical environment and biological components and do not need environmental assessment.

The AGP-II is assigned as EA Category "B" given that significant adverse environmental and social impacts are not expected to occur due to the nature of the proposed sub-project activities (e.g., institutional development, introduction agricultural productivity enhancement technologies, agri-business development, small-scale water management, small-scale rural infrastructure development and management, watershed management) as indicted in section 2 above. Overall, the proposed operation will impact positively on the biophysical environment, as investments will be planned through a participatory watershed development approach and include various water and soil conversation measures.

Therefore, this ESMF sets out to establish the Environmental and Social Assessment (ESA) process to be undertaken for implementation of project activities in the proposed AGP-II when they are being identified and implemented.

This process requires that AGP-II and its implementing partners screen project activities to identify their potential adverse impacts and thereby determine the corresponding mitigation measures and prepare ESMP to mitigate adverse environmental and social impacts.

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Natural Habitats OP/BP 4.04: This policy is triggered by any project (sub-project) with the potential to cause significant conversion (loss) or degradation of natural habitats (protected or unprotected ecologically valuable habitats), either directly through construction or indirectly through human activities induced by the project. The natural habitats are land and/or water areas where the biological communities are formed largely by native plant and animal species, and human activities have not essentially modified the primary ecological functions. Natural habitats have important biological, social, economic, and existence value.

The policy will be triggered because sub-projects in AGP II may have some adverse impacts on wetlands, protected areas, conservation sites, and critical ecosystems. Sub-projects involving significant conversion of natural habitats or if an environmental assessment indicates that a proposed sub-project would significantly convert or degrade natural habitats, the proposed sub-project will not be eligible for financing under AGP II.

Pest Management (OP/BP 4.09): The policy supports safe, effective, and environmentally sound pest management. It promotes the use of biological and environmental control methods. Rural development projects have to avoid using harmful pesticides. A preferred solution is to use Integrated Pest Management (IPM) techniques and encourage their use in the whole of the sectors concerned.

This policy is triggered because, though AGP-II funds will not be used to manufacture, or directly purchase or distribute agrochemicals, it is likely that support through the AGP-II will encourage farmers

to use more inorganic fertilizer and pesticide especially irrigation and agriculture related subprojects - component I and III. The ESMF has responded sufficiently to this concern by specifying actions that must be undertaken to minimize the environmental, health, and safety impacts of pesticide use. If environmental and safety hazards are identified or expected from the use of pesticide (insecticides, herbicides, etc...), the project will prepare Pest Management Plans (PMPs), which Integrated Pest Management Plans (IPMPs) is part of it, prior to commencement of the sub-projects. See section 5 for the detail discussion.

OP4.10: The objective of this policy is to (i) ensure that the development process fosters full respect for the dignity, human rights, and cultural uniqueness of vulnerable and historically under-served communities and peoples; (ii) ensure that they do not suffer adverse effects during the development process; and (iii) ensure that such communities and peoples receive culturally compatible social and economic benefits. Social Assessment (SA) has been prepared for AGP-II to address OP 4.10.

Physical Cultural Resources (OP/BP 4.11): This policy addresses physical cultural resources, which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances.

The policy is triggered by the AGP-II because the small scale infrastructure sub-projects involve access road construction, small scale irrigation including small dam construction, rural feeder and foot bridge construction, and construction of market shed and warehouse which may potentially affect physical and cultural resources. The necessary steps of public consultations, engagement of cultural or religious leaders, local authorities need to be conducted before decision on project is made.

Cultural heritage resources are normally not fully known during project preparation, but infrastructure subproject as indicated above may be located in the influence area of some sites. Based on the consultation made with regional cultural and tourism bureaus in each regions and secondary data obtained from the same regions; and similar consultation held with and secondary data from Authority for Research & Conservation of Cultural Heritage (ARCCH) of Ethiopia, the following major PCRs are found in the AGP-II intervention areas.

The major PCR in the AGP-II intervention area of Oromia region are: *Cafe Tuma* the place where Gada laws are drafted and modified; *Andode Tuma* - the place where Gada laws are publicized or announced; Irecha (where the Oromo people gather on the shore of the lake Hora Harsade to conduct ritual Irecha Ceremony, traditional thanks giving ceremony); *mountain Chuqala (Ziquala)* where Church of '*Abo*'- an old monastery of over 500 years old, which has a repository of old manuscripts of religious significance written on well prepared goat hides known as '*birana*'; *Addis Alem /Ejere/ Church and Museum* which is known for its prominent church; *Debre Tsiyon Mariam* and *the museum* with historical antiquities of royal families and religious manuscripts; *Awash Malka Qunture* which is known for its paleontological sites; *Adadi Mariam Church* which is historic church; *Monastery of Debre Libanos* which is one of the Ethiopia's most reputed Orthodox monastic enclaves. The enclave of the monastery consists of villages of nuns and monks, the original monastery (cave) and a modern church of a beautiful architecture; the *Portuguese Bridge* which is Built in 16th century by the Portuguese and bridge is another historical monument of tourist significance; the *Sof Umar Cave* and the *Dire Sheik Husen Shrine*; *Faraqasa* which is found in Arsi zone and is the site of spiritual belief center where eventful ceremony is held every year being attended by thousands of pilgrims coming from all over the country; the *Mosque of Asa Usman* and rock inscriptions in Arabic language on the mosque reflect Islamic culture and literature to be visited in the Arsi zone; *Mada Walabu* which is one of the important places in the history of the Oromo people. It is

located in southernmost tip of the Bale Zone. It was a place where rules and regulations were reformed through traditional proclamations. It was also the seat of ritual leaders such as 'Qalu' and 'Aba Gada', and a place where veneration took place by pilgrims coming from all over Oromia to pray and give thanks to God for His favor, protection, health, happiness, etc. It was a place where power transfer ceremonies took place peacefully from one Gada leader to the other from generation to generation; *Abba Jifar Palace* found in Jimma Town; *Jimma Museum* that displays most of the historic materials of King Abba Jifar, his kingdom and cultural objects of the local Oromo people and that of the other ethnic groups around Kafa; and *Wallagga Museum* and *Dej*. *Kumsa Moroda Palace* found in Nekemte Town**:** The museum exhibits varieties of traditional household furniture that reflect the culture of the Oromo people and that of various ethnic groups in the area. The first script of translation of the Holy Bible in Afan Oromo, and the Holy Qur'an and other religious books are also found here in.

The SNNPR is endowed with a number of physical cultural resources such as *Hot and Natural hot spring; Monasteries and Churches; Historical mosques; Stelae; Caves and forts; Pale anthropological sites; and Cultural and Ethnic attraction.* The major PCR are briefly mentioned below.

Hot and Natural hot spring: the region has a number of hot and cold springs as well as holly and mineral waters which are attractive and curative. Wondo Gent and Gidabo hot spring in sidamo, Dadibewn hot spring in Keffa Loqe and Taju hot spring in Guragae, Wejitem and Usinka Hot springs in Bench Maji zone. *Monasteries and Churches:* there are more than six ancient Monasteries and churches in the region. At present Muhur Eyesus and Abune Gebremenfes Kidus in Guragae zone are used as educational center of orthodox churches. St. Michael in Dawro,Beha Gorigis and Anderach Medahni-alem in Keffa zone. *Historical mosques:* Tongola in keffa; Alkeso and Haji Alye in Silte; Qatbare, Aberaet and Zembemola in Guraghe zone are the most common mosques in the region. Dila mosques is also very well-Known recent in their architectural design and attracts many tourists. *Stelae:* Stelae are among the oldest cultural heritages found in most parts of the region mainly in Gedeo Gurage, Silite zone and Yem special woreda. These setlae attracts the interest of archeologist and potential for tourism development. Tiya stelae registered as one of the world heritage sites of the country. *Caves and forts:* the most amazing caves include Diabeten Caves of Bench maji and Shekshеko cave in sheka zone. The long defense Hallal walls which cover 175.5 Km in length found in Dawro zone. *Paleanthropological sites:* the lower Omo valley Paleanthropological sites are registered by UNICCO as the world Heritage sites. *Cultural and Ethnic attraction:* the region has typical ethnical cultural diversity comprising more than 56 distinct nationalities living in different agro-ecology all having their own culture, farming system, indigenous knowledge of managing natural resources.

In Tigray region there are several archaeological places in Laelaymaichew Woreda around and in Axum town. There are also religious and beautiful landscape places all over the region that have tourism values.

This policy requires that whenever physical cultural resources are encountered an investigation and inventory of cultural resources potentially affected need to be carried out. Mitigation measures need to be included where there are adverse impacts on physical cultural resources.

In Benishangul Gumuz region, several archaeological sites such as the palace of Sheikh Khojele in Assosa Benishangul and in Mankush; and several Rock art and Cave sites were identified. *Harar region***:** The fortified historic town of Harar is located in the eastern part of Ethiopia, 525 km from the capital of Addis Ababa, on a plateau with deep gorges surrounded by deserts and savannah. The walls surrounding this sacred city, considered "the fourth holy city" of Islam, were built between the 13th and 16th centuries and served as a protective barrier. There were five historic gates, which corresponded to the main roads to the town and also served to divide the city into five neighborhoods. Harar Jugol numbers 82 mosques,

three of which date from the 10th century, 102 shrines and a number of traditional, Indian and combined townhouses with unique interior designs, which constitute a spectacular part of Harar's cultural heritage.

This ESMF provides a clear procedure for identification, protection and treatment of PCR discovered. These procedures will be included in the TOR to carry out environmental and social assessment (ESA); and environmental and social management plan (ESMP). When environmental and social assessment is conducted for specific AGP-II subprojects, the regional and Woreda cultural and tourism bureau (at regional level) and/or office (at the Woreda level) should be consulted depending at what level the subproject is implemented. These respective bureau or office shall also comment on the ESA and ESMP reports.

Involuntary Resettlement (OP/BP 4.12): The policy on involuntary land acquisition and property losses aims to avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; assist displaced persons in improving their former living standards, income earning capacity, and production level, or at least in restoring them; encourage community participation in planning and implementing resettlement; and provide assistance to affected people regardless of the legality of land tenure. The policy covers any loss of land or other assets resulting in relocation or loss of shelter; loss of assets or access to assets; loss of income sources or means of livelihood whether or not the affected people must move to another location. When the policy is triggered, a Resettlement Action Plan must be prepared. In situations, where all the precise impacts cannot be assessed during project preparation, provision is made for preparing a Resettlement Policy Framework. The Resettlement Action Plan/Resettlement Policy Framework must include measures to ensure that the displaced persons are informed about their options and rights pertaining to resettlement. The displaced persons are consulted on, offered choices among, and provided with technically and economically feasible resettlement alternatives and provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project.

AGP II subprojects like small scale irrigation development and management, rural feeder road construction, and market centre development and management may not necessarily cause large scale involuntary land acquisition and property losses due to their nature and scale. However, such subprojects may cause some involuntary land acquisition and property losses. Hence this policy is triggered. AGP-II will make all possible efforts to avoid impacts on people, land, property, including people's access to natural and other economic resources, as far as possible. To manage the social safeguard issues related to this, a separate Resettlement Policy Framework (RPF) is thus prepared. The RPF will set the guidelines for the Resettlement Action Plans (RAPs)s) that will have to be prepared when any program investment triggers this policy.

Safety of Dams (OP/BP 4.37): This Policy requires that experienced and competent professionals design and supervise the construction of dams, and that the borrower adopts and implements dam safety measures through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, dam safety assessment should be carried out and necessary additional dam safety measures implemented. This is to ensure that it does not fail and cause damage to, or failure of, the subproject investment.

AGP-II would not finance any new establishment or rehabilitation of large scale irrigation facilities and dams above 4.5 meter height. AGP-II will not finance also a dam having special design complexities including foundations, and located in a zone of high seismicity as such dams are considered high hazard even with their dam height less than 4.5m. However, AGP-II might finance the construction of check dams or small dams for water storage (less than 15m height) and will finance activities that may rely on the performance of an existing dam. In an event that AGP-II finances the construction of a small-scale

irrigation scheme (dams); the implementing agency is required to use the Small Dams Safety Guideline that the MoA has prepared.

Similarly, in an event that AGP-II finances sub projects that utilize existing dams, the implementing agency needs to submit, through the regional and federal AGP-II coordination Units, to the World Bank evidence of effective operation of dam safety program and plans for Bank's review and full inspection and dam safety assessment of the existing dam. The Bank will review previous assessments of dam safety or recommendation and safety program already in operation for the particular dam prior to commencement of implementing the activities. In the event that no effective dam safety program or plan is in operation covering the particular dam, commencement of any activity would be contingent on the use of the Small Dams Safety Guideline developed by the MoA, which includes detail implementation plan, construction and operation supervision, quality assurance, emergency preparedness plan.

Main issues from the dame Safety Guidelines, which is developed by MoA for the small dams to be constructed by AGP, are summarized and presented in this ESMF in Annex 9. For the detail information related to the small dam safety guideline, refer the small dam safety guideline developed by MoA. In addition, implementing agencies that construct small dams can use the FAO '*Manual on Small Earth Dams, a guide to sitting, design and construction*'.

Projects on International Waterways (OP/BP 7.50): The policy applies to any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more country. It also includes any tributary or other body of surface water (any bay, gulf, strait, or channel) bounded by two or more country or, if within one country, recognized as a necessary channel of communication between the open sea and other states and any river flowing into such waters. The policy applies to hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways. The policy recognizes prior riparian states agreements/arrangements and calls for notification of riparian states by parties that proposes to undertake project that affects international waters.

AGP-II Woredas are located in international water basins mainly Blue Nile, Wabele Shebele, Omo, Tekeze and Baro. Some of the AGP subprojects such as the development of new and rehabilitation of existing small-scale irrigation schemes trigger OP7.50. While the impact of such individual sub-projects would be negligible and the cumulative abstractions minor, World Bank will notifies the riparian countries regarding this policy.

3.3. Public Disclosure

The World Bank procedure requires a public disclosure of the ESMF prior to project appraisal for a project like AGP-II. This process:

- Ensures that the public and other stakeholders are allowed to comment on the potential environmental and social impacts of the project,
- Enables the Appraisal Team to enhance the ESMF, i.e., its measures and plans to prevent or mitigate any adverse environmental and social impacts

As a result of this procedure; the community, the Kebele Development Committee (KDC), the Woreda AGP-II SC and TC; regional AGP-II TC, and other interested parties are consulted during the preparations of this ESMF (see section 1.2.3 and Annex 10&11). The ESMF will be disclosed to all of these stakeholders at their level and at the national level disclosure workshop; and at the MoA of website. The ESMF will also be disclosed at the Bank's Info Shop prior to project appraisal.

4. ESMF Process for Subproject Preparation, Approval, Implementation and Reporting

This section outlines general AGP-II coordination and implementation, the environmental and social screening procedures, approval, implementation and reporting systems. To avoid or minimize the adverse environmental and social impacts of subprojects, in all the ESMF processes, the KDC including the DA, the Woreda and regional implementing agencies are required to use the environmental and social screening checklist indicated below and in Annex 1, 2&3. Information in section 5 helps to avoid, minimize or mitigate the adverse environmental and social impacts of subprojects. The community will participate in subproject identification through Community Level Participatory Planning (CLPP) approach. The KDC which the DA is member of it participate in the environmental and social screening process. The ESMF process is consistent with the applicable national ESIA procedure and CLPP process. The responsibilities of AGP-II implementing Agencies in doing so are also outlined in this section.

4.1. Project Coordination and Implementation

The implementation of the AGP-II subprojects and the ESMF will take place through the existing government structures from the federal to the local or community level institutions. This will follow suit of the AGP-I implementation structure.

Federal level implementation

The main organization responsible for implementation of ESMF at federal level is the Ministry of Agriculture (MoA). The MoA, through the AGP-CU, will play a leading role in ensuring the proper implementation of the ESMF. It will ensure that the applicable GoE rules and regulations as well as World Bank Safeguard Policies and Procedures are enforced.

Under the MoA, Agricultural Growth Program Coordination Unit (AGP-CU) is established to follow up the management as well as day-to-day implementation of the program. The Environmental and Social safeguard specialist within the coordination unit is responsible for following up the implementation of the ESMF.

AGP Federal Steering Committee (AGP FSC), which is chaired by the State Minister for Agricultural Development sector, MoA, is established with the responsibility of oversight and major decision making such as the approval of annual work plans and budget, including procurement plans. The AGP FSC is responsible for making major decisions affecting the management as well as implementation of the AGP. AGP Federal Technical Committee (AGP FTC) is also established to support the AGP-CUs in technical backstopping and supervision of lower levels, to coordinate AGP-II implementation within their respective institutions (including institutional capacity building as appropriate); and to provide technical advice to the AGP FSC in matters requiring the decision of the AGP FSC.

Regional level implementation

Similarly, at regional level, AGP Regional coordination Unit (AGP-RCU) under the Bureau of Agriculture (BoA) is established to follow up the management as well as day-to-day implementation of the program for matters pertaining to the regions. The BoA, through the AGP-RCU, will play a leading role in ensuring the proper implementation of the ESMF at regional level. It will ensure that the applicable GoE rules and regulations as well as World Bank Safeguard Policies and Procedures are enforced. At regional level, Environmental Protection, Land Administration and Use Authority (EPLAUA) will be responsible for ensuring the implementation of ESMF through review and approval of safeguard instruments, and monitoring of the ESMF implementation. Similarly, the Environmental and Social safeguard specialists within the regional coordination units are responsible for following up the implementation of the ESMF.

Similar to the federal level, AGP Regional steering committee (AGP RSC) and technical committee (AGP RTC) have been established at regional level with the same function as that of the federal level indicated above but for matters pertaining to the regions.

Woreda level implementation

At Woreda level, AGP Woreda Steering Committee (AGP WSC) comprising of relevant offices is established to review and approve annual work plans and budgets, review implementation reports and ensure multi-sectoral coordination. AGP Woreda Technical Committee (AGP WTC) is also formed to give technical backstopping and supervision of the implementation of the program activities. The overall responsibility for supervision of the implementation of the ESMF will be that of Office of EPLAU. Woreda level Compensation and Resettlement Committee (CRC) ensure the implementation of the RPF which is separate document prepared to address resettlement related issues when implementing AGP-II subprojects. The detail role and responsibilities of the CRC, and its membership composition is described in the same RPF document.

Kebele level implementation

Kebele Development Committees (KDCs) at Kebele and sub-Kebele levels are responsible to follow up and supervise implementation of the ESMF including carrying out environmental and social screening of subprojects. The Kebele level Natural Resources Management Development Agent (DA) has the responsibility to ensure the implementation of the ESMF. Similarly, Kebele level CRC ensure the implementation of the RPF.

4.2. ESMF Processes and Procedures for Subproject Screening

The objective is to assess any potential safeguard issues early in the design and preparation process. The screening of AGP-II subprojects will be conducted by completing the designated subproject screening checklist as indicated in Table 4.1 below & in Annex 1.

Step (i): Illegibility checking of subprojects by DA and KDC at Kebele level

Once the local communities identified demand-driven AGP-II subprojects, DAs and KDCs screen these subprojects against the following environmental and social screening checklist to check their eligibility for AGP-II financing.

Table 4.1: Checklist to check subprojects eligible for AGP-II financing

Will the sub-project:	Yes	No
cause any large-scale physical disturbance of the site or the surroundings		
cause significant involuntary displacement of people or social disturbances, involuntary loss of assets		
involve removal or conversion of forests and other natural resources		
disrupt the quality or quantity of water in a waterway shared with other nations		
cause degradation of critical natural habitats		
affect important physical and cultural resources (historical, religious, archaeological sites and monuments)		
involve construction of dams more than 4.5 meters		
cause any loss of biodiversity		
affect any vulnerable or underserved groups		

If the answer to any one of the questions indicated in the table above is 'Yes', then the subproject should be rejected unless the features can be avoided by change of design or location. If on the contrary the answer is 'No', then proceed to the next step. Once subprojects screened, the subproject will be sent to ***Woreda relevant Implementing Agencies*** (IAs) such as Office of Agriculture, Office Road Development, Office of Water/Irrigation development, etc. for further screening.

Step (ii): Subproject screening and reviewing at Woreda level

Subproject screening at Woreda level

Once the subprojects are designed and screened at Kebele level, they should further be screened at Woreda level by relevant Woreda Implementing Agencies (IAs) to which the subproject refers to as indicated above in step (i). The screening of sub-projects by ther implementing agency at the Wereda level should be done using the checklist provided in Annex 2. The following sections explain the steps that should be followed in screening sub-projects.

First, the Wereda expert would check all the subprojects if they fall under each of the following categories.

Table 4.2: Checklist to check projects which need special attention

Feature of Concern	Yes	No
Subproject likely to use pesticides or other agro-chemicals		
Subproject involves land acquisition, or loss of assets, or access to assets on the land		

If any of the AGP-II subprojects fall under the above category, the Woreda IA should include all the necessary measures before approval of the subproject. For example, if the subproject is likely to use pesticides, pest management plan (PMP) should be prepared. Similarly, if the subproject involves land acquisition, or loss of assets, or access to assets on the land, the IA should prepare a resettlement action plan (RAP). As there may be capacity problem by Woreda IAs in carrying out environmental and social screening, Woreda EPLAUA would provide the Woreda IAs with technical support on these matters.

For subprojects which require PMP preparation before approval, the main responsible IA is Woreda office of Agriculture. Regional bureau of agriculture provide technical support regarding pest management plan preparation and related issues. The regional plant health clinics also have role on giving technical support in this regard. Integrated Pest Management (IPM) is an integral part of the PMP. Best practices related to IPM found in the country like farmer field schools and others can be explored during PMP preparation and implementation.

The Woreda relevant IAs should also check whether or not the subprojects fall under one of the following categories of environmental and social concerns.

Table 4.3: checklist to screen subprojects of environmental and social concerns

Feature of Concern	Yes	No
Subproject located within National Park or other designated wildlife area or buffer zone		
Subproject located in a Priority Forest Area		
Subproject involves draining of or disturbance to a wetland		
Subproject located within a recognised Cultural Heritage site or World Heritage site		
Subproject that incorporates a dam		
Subproject that involves use of hazardous laboratory chemicals		
Subproject involves abstraction of significant volume of water from international waterways		

If the answer to any one of the above environmental and social concerns is 'Yes', the design of the subprojects should be modified to overcome the said environmental and social concern. If it is not possible to avoid the environmental concern, the subprojects should be labeled as '***subprojects of environmental and social concern'***.

For those sub-projects of environmental and social concern, a checklist of potential impacts and impact significance for a feeder road shown in Table 4.4, as an example. A checklist has been provided in Annex 2 for more sub-projects.

Table 4.4: Sample Environmental and social impact significance rating checklist (sample example)

Subproject types	Rate of Impacts				
	None	Low	Medium	High	Unknown
Rural Feeder Road Construction Subprojects					
Soil erosion and initiation of flooding, gully erosion, farm land degradation					
Loss of biodiversity through cut and fill activities					
Destruction of natural habitats					
Sedimentation to water sources and reservoirs					
Disturbance to and loss of ecologically sensitive habitats					
Damage to cultural, religious and historical sites					
Cause opening of quarry/borrow sites and result in water pollution and vector borne diseases					
Cause land acquisition and property losses					
Others (specify)					
Other subproject (specify)					

The checklist provides potential impacts for AGP-II subprojects with different rate of potential impacts. Go to the relevant section of the checklist and mark (✓) each potential impacts listed as None, Low, Medium, High or Unknown.

Once the checklist is filled, count the number of potential impacts marked as **None**, **Low**, **Medium**, **High** and **Unknown**. The table below (table 4.5) helps you to determine whether or not the subprojects should be labeled as 'subprojects of environmental concern' and further actions need to be taken at this stage before proceeding to the next level.

Table 4.5: Rating of potential impacts of AGP-II subprojects

Rating of potential impacts of AGP-II subprojects	Action needed
Subprojects are marked from ***low*** to ***medium*** for potential impacts	Incorporate potential mitigation measures into the design of the subprojects. To do so, refer to the potential mitigation measures listed for each potential impact in this ESMF (annex 9).
Subprojects cause only one ***high*** potential impact	Incorporate potential mitigation measures into the design of the subprojects. Again, refer to the potential mitigation measures listed for each potential impact in this ESMF (annex 9).
Subprojects cause more than one ***high*** potential impacts	These type of subprojects will be labeled as '***subprojects of environmental concern'*** because changing the design may not avoid the anticipated adverse impacts
Subprojects where it is difficult to predict the potential impacts, i.e., subprojects which have two or more ***unknown*** potential impacts	These subprojects should also be labeled as '***subprojects of environmental concern'*** because of the many unpredictable potential impacts.

Subprojects which are not labeled as 'subprojects of environmental concern', environmental clearance is given by Woreda EPLAUA to concerned Woreda implementing agencies which the project refers to, or to Woreda Office of Agriculture for financing. For those subprojects which are not labeled as subprojects of environmental concerns but requiring preparation of environmental and social management plan (ESMP), the ESMP should be prepared and send to Woreda EPLAUA for review.

a. Subproject review and approval at Woreda level

The ESMP prepared by the Woreda relevant AGP-II implementing agencies for those subprojects which are not labeled as subprojects of environmental concern should be reviewed by the Woreda EPLAUA. In doing so, the Woreda EPLAUA follows two appraisal steps to appraise/review subprojects of which are not labeled as subprojects of environmental concern.

Desk appraisal of subprojects

The Woreda EPLAUA check the environmental and social screening checklist and impact rating checklist filled by the Woreda implementing agency to see whether or not it is done correctly and as per the requirement of the ESMF guideline. Woreda EPLAUA also review the ESMP including PMP and RAP/ prepared to check whether all the necessary information are included; and is done according to the ToR presented in Annex 6 (for PMP), and Annex 7 (for ESMP) of this ESMF guideline, and the RPF prepared for AGP-II.

Field Appraisal
If the desk appraisal indicates that the proposed subproject may have environmental or social concerns that are not adequately addressed in the application or if the application meets certain criteria but the review authority requires field appraisal before the application can be considered further. For the field appraisal, the Woreda EPLAUA use the field appraisal form indicated in Annex 3 of this ESMF guideline. It should be noted that the Woreda EPLAUA should support Woreda implementing agencies when screening subprojects, impact rating and during the preparation of ESMP including RAP/ and PMP.

After carrying out desk review and field appraisal, the Woreda EPLAUA gives environmental and social clearance (ESC) to the Woreda relevant IAs to which the subproject is to be financed by AGP-II. The subprojects should not be financed and implemented by the Woreda IAs before ESC is obtained from the Woreda EPLAUA. The finance section/unit of the Woreda IAs should not process any payment without the ESC letter is attached with the request for payment. For subprojects labeled as ***'subprojects of environmental and social concern'*** proceed to the next step.

Step (iii): Notification of environmental and social concern subprojects
AGP-II subprojects which are labeled as 'subprojects of environmental concern' should be communicated to regional line bureaus which the subproject refers. The regional line bureau communicates the subprojects with environmental and social concerns to the regional EPLAUA.

Step (iv): Review of notified subprojects by regional EPLAUA
The regional EPLAUA should make note of the following points when reviewing/appraising subprojects of environmental concern.

- AGP-II subprojects which involve the use of pesticides, land acquisition or loss of land assets or access to assets do likely require special arrangements such as the development of Pest Management Plan (i.e. PMP) and RAP/. Under this situation, the regional EPLAUA makes sure that these management plans are in place for these kinds of subprojects, and give technical support for the concerned implementing agency on the matter. The regional AGP-II environmental and social safeguard facilitate the process and provide technical support for the regional AGP-II IAs.

- For AGP-II subprojects, which do not involve the use of pesticides, land acquisition or loss of land assets or access to assets, and which do not require full ESIA, the regional EPLAUA ensures that environmental and social management plan (ESMP) is prepared by regional concerned AGP-II IAs. In this case, for all subprojects which do not require full ESIA, all the environmental and social impacts as a result of the subprojects will be managed by the mitigation measures included in the ESMF (section 5).

- For AGP subprojects which may extract a large volume of water from international waterways, check for all legal requirements and agreements entered into with all riparian countries.

The regional EPLAUA should advice the concerned regional implementing agency on the following points:

1. Communicate the decisions for each of these subprojects of environmental concern with regard to the need or not of a full ESIA.
2. If a full ESIA is required, advice the concerned regional implementing agency defines the scope with emphasis on the required skills, areas of focus and duration of ESIA. In other words, the regional EPLAUA advice the regional AGP-II IAs prepare TOR for ESIA and submit to regional

EPLAUA for review. Incorporating its comment, the regional EPLAUA return the TOR without delay to the implementing agency to carry out the ESIA. In this regard, the regional and federal AGP-II environmental and social safeguards specialists provide technical support in the preparation of the TOR.

3. If a full ESIA is not required, the regional EPLAUA provide the concerned implementing agency with guidelines in connection to technical matters, and environmental and social management plan (ESMP). The concerned implementing agency should prepare and submit the ESMP to regional for review. The regional EPLAUA review and give environmental and social clearance as soon as possible to avoid implementation delay.

Similar to the Woreda level review and appraisal, the regional EPLAUA may follow both the desk and field appraisal procedure to appraise subprojects of environmental concern and which do not require full ESIA. For this, similar field appraisal form (Annex 3) can be used.

Step (v): Conducting ESIA study

All concerned regional implementing agencies of AGP-II subprojects are responsible to carry out ESIA. If the regional level implementing agencies have the required qualified and experienced composition of experts to carry out the ESIA by their own staff, they can carry out the ESIA by their own force; otherwise it should be done by national independent consultant. The responsibility of EPLAUA at regional level is to review the terms of reference to carry out ESIA, and later the ESIA reports. In both cases, the cost of the ESIA study is part of the budget of AGP-II subprojects.

Step (vi): Reviewing ESIA report by regional EPLAUA

The final step in this ESMF process is the review of the ESIA reports produced for AGP-II subprojects of environmental concern. This review should be conducted by the regional EPLAUA in the shortest possible time to avoid delaying AGP-II subprojects from implementation. The environmental and social management plan (ESMP) including RAP/ and PMP prepared by the regional IAs should be reviewed by the regional EPLAUA. Both field appraisal and desk review shall be done by the regional EPLAUA. Use the field appraisal form (Annex 3) for the field appraisal.

Criteria for Safeguard approval

Two decisions can be made based on the ESIA of the AGP-II subprojects.

1. If the ESIA is in conformity with the applicable Operational Policies of the World Bank and the environmental and social guidelines of Ethiopia, the subprojects will be granted an environmental clearance
2. On the other hand, if the ESIA does not fulfill the Banks Environmental and social requirements and the country's environmental guidelines, the decision will be one of the following:
    - Request for supplementary or new ESIA report; or
    - Approval of the implementation of the subproject with condition; or
    - Rejection.

The regional EPLAUA should communicate the decision of the review of the ESIA report to concerned regional implementing agencies and regional AGP-CU as soon as possible. The regional AGP-II IAs should not implement the subprojects unless they get environmental and social clearance from the regional EPLAUA. The finance unit of each AGP-II implementing agencies which their subprojects have environmental and social concern and are required to prepare ESMP/ESIA report should not issue any payment unless the environmental and social clearance is attached with the request of payment.

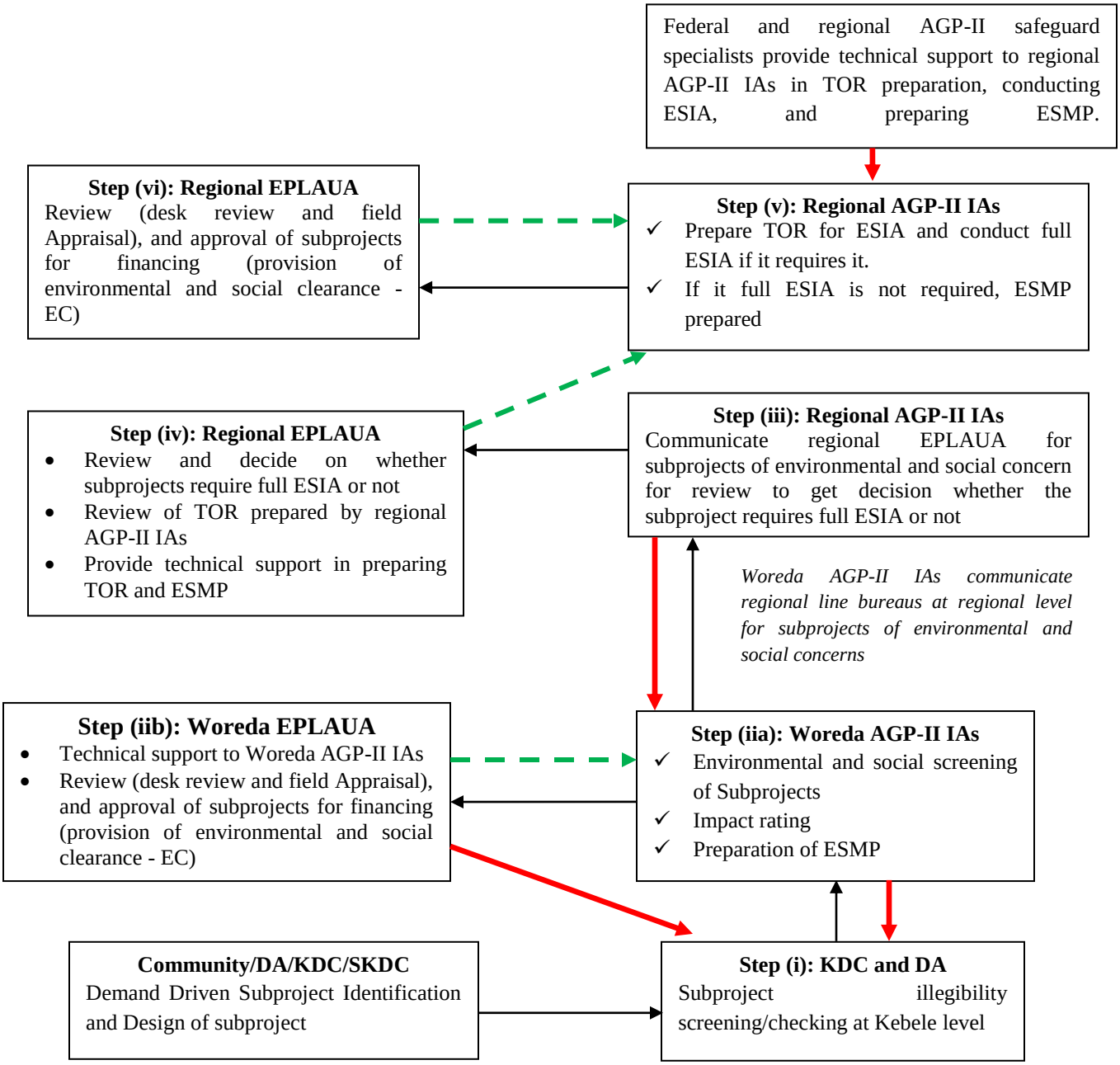

Fig. 4.1: Flow chart for the ESMF Processes and Procedures

Flow of Technical Support
Flow of review and Approval decisions
Flow of activity

4.3. Disclosure of Subprojects Information

Before the approval of AGP-II subprojects, the relevant AGP-II IAs at all level should make Environmental and Social Management Plans (ESMP) including PMP, and RAP/ available for public review at a place accessible to local people and in a form, manner and language they can understand. The general public will be invited to comment on these reports prior to their approval.

4.4. ESMF Reporting

Local authorities are normally required to report quarterly and annually on their subproject activities during the preceding quarter and year, respectively. These quarter and annual reports should capture the experience with implementation of the ESMF procedures. The purpose of these reports is to provide:

- A record of the subproject transactions;
- 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
- Practical information for undertaking an annual review.

In view of the significant nature of the impacts of some of the activities of AGP-II, a robust system of compliance monitoring and reporting should be in place.

Quarter and annual reports should be prepared at Woreda, regional and federal levels. Quarter and annual ESMF reporting format for Woreda Office of EPLAUA, regional AGP-II Coordination Unit, and federal AGP-CU coordination unit set out in Annex 4. At a *Woreda level*, quarter and annual report will be prepared by Woreda EPLAUA. The objective of the report is to provide a feedback on the activities of and observations on the implemented AGP subprojects over the review period in the Woredas. This report will be submitted to regional EPLAUA and Regional AGP-CU. Similarly, at regional level, quarter and annual report will be prepared by regional AGP-II CU to provide a feedback on the activities of and observations on the implemented AGP-II subprojects over the review period in the region.

The regional AGP-CU Environmental and Social Safeguard Specialist will prepare quarter and annual ESMF performance reports submit it to the federal AGP-CU.

At the federal level, the quarterly and annual report will be prepared by Environmental and Social Safeguard Specialists of federal AGP-CU and will be submitted to the World Bank country office.

4.5. Annual Review

The objectives of annual reviews of ESMF implementation are two-fold:

- to assess project performance in complying with ESMF procedures, learn lessons, and improve future performance; and
- to assess the occurrence of, and potential for, cumulative impacts due to project-funded and other development activities

The annual reviews are intended to be used by project management to improve procedures and capacity for integrating natural resources and environmental/social management into project operations. They will also be a principal source of information to Bank supervision missions.

Annual reviews should be undertaken after the annual ESMF report has been prepared and before Bank supervision of the Project, at the closing of each year of the project. It is expected that each review would require **3-4** weeks of field work (interviews, examination of subprojects), and that the review report would be completed within 2 weeks of completing the field work. 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 and b) cumulative impacts.

It is expected that these reviews will be carried out by an independent local consultant, NGO or other service provider that is not otherwise involved in the project. Copies of the annual review report should be delivered to project management, to each district office responsible for appraisal, approval and implementation of subprojects, and to the Bank. Project management (federal, regional or Woreda) may also host federal, regional or Woreda workshops to review and discuss the review findings and recommendations.

4.6. Environmental Auditing

Environmental auditing can be defined as "a systematic, periodic, documented and objective review of project activities related to meeting environmental requirements". An audit should assess the actual environmental impact, the accuracy of prediction, the effectiveness of mitigation and enhancement measures, and the functioning of monitoring mechanism. Further, the review should be systematic and objective. The objectives of environmental audits are to:

- Verify compliance with environmental requirements;
- Evaluate the effectiveness of environmental and social management plan prepared; and
- Assess risk from regulated and unregulated practices.

Environmental auditing 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.

The responsibility to undertake environmental and social audit is the regulatory body which is the environmental protection authority/agency at various level. For AGP-II subprojects, regional and Woreda level EPLAUA are responsible to undertake environmental audit for subprojects which are reviewed, approved and implemented at regional and Woreda level respectively. Environmental and Social audit can be done once in a year or every two year. The audit report should be communicated to the implementing agencies which the subproject refers to and to the regional AGP-CU. The regional AGP-CU should submit the audit report to the federal AGP-CU.

5. Environmental and Social Management

5.1. Environmental and Social Management of Subprojects

The ESMF emphasizes that subproject planning should strive for plans and designs that avoid or minimize creating adverse environmental and social impacts that have to be explicitly managed. All the potential environmental and social impacts as results of the subprojects, and associated potential mitigation measures are described below in detail. *Environmental and Social Management Plan (ESMP)*

When a subproject includes distinct mitigation measures (physical works or management activities), an Environmental and Social Management Plan (ESMP) needs to be included with the subproject application as mentioned in the previous sections.

The relevant Woreda, regional and federal AGP-II subprojects implementing agencies will be responsible for the preparation of required ESMPs. For example, for a proposed small-scale irrigation subproject, Woreda and/or regional water bureau will be responsible to prepare ESMPs. On the other hand, the Office or Bureau of Agriculture (or livestock agency) will be responsible for issues related to livestock and rehabilitation of livestock health care posts. The Woreda and regional EPLAUA, and the regional AGP-CU Environmental and Social Safeguard Specialist at their respective level are responsible to review the ESMPs prepared by the implementing agencies. Woreda implementing agencies and EPLAUA may consult respective regional bureaus if there is a need for more technical advice than is available at the Woreda level.

The content of the ESMPs will follow the requirements under the Ethiopian EPA EIA guidelines document and the World Bank OP 4.01 requirements. An ESMP should be a short and concise document, perhaps only a few pages, and must contain the necessary sections as outlined below.

- *Summary of the impacts,*
- *Description of mitigation measures,*
- *Description of monitoring program,*
- *Institutional arrangements,*
- *Implementation schedules and reporting procedures, and*
- *Cost estimates and sources of funds.*

For the detail descriptions of the contents of ESMP refer Annex 7.

When preparing the ESMP, the community participation is crucial since local knowledge is important in identifying, designing and planning the implementation of practical mitigation measures. It is especially important where the success of an ESMP depends on community support and action, both in implementing mitigation measures and monitoring their success.

Potential Environmental and Social Impacts of AGP-II

The proposed AGP-II project can have both positive and negative impacts and the impacts may occur at different stages of the project cycle (mainly during construction and operation). The environmental and social management plans that will be prepared for each subprojects is intended to maximize the positive impacts and ensure sustainability of projects by avoiding, minimizing, mitigating or compensating the negative impacts through appropriate mitigation measures.

Potential Positive Impact of AGP-II Implementation

The AGP-II will have the following, but not limited, potential positive impacts:

- ✓ Provision of extension service provision to farmers in most of the program implementation areas will be improved as a result of various capacity building activities implemented by the program thereby increased the production and productivity of smallholder farmers;
- ✓ Clear and measurable benefits in terms of productivity, household income, production diversification, and increasing the availability of varied household diets can be achieved through implementation of small scale and micro-irrigation subprojects;
- ✓ The establishment of SSI schemes will provide the water quantity required for continuous small scale irrigation use during dry season and will increase the yield, cropping intensity, and irrigated land area;
- ✓ Implementation of watershed based soil and water conservation subprojects will bring benefit like reduced land degradation, improved water flow for the SSI and micro-irrigation subprojects and improving the sustainability of the irrigation schemes and technologies by protecting them from flood damage and siltation problem;
- ✓ Improve the income and livelihood of the community through implementation of different farmer group and community subprojects;
- ✓ Improve the capacity of implementing institution in managing projects;
- ✓ Improve the sustainability of subprojects by considering environmental and social safeguard issues in the project cycle management; and
- ✓ Improve community level participatory project planning, implementation, monitoring and evaluation.

Potential Negative Impact of AGP-II subprojects

Most of the subprojects planned under the AGP-II will vary in a scale. Due to some of the AGP-II subproject like development and management of small scale and micro-irrigation infrastructures subprojects, construction of rural feeder road, development and management of market centre, watershed management, and introduction of some improved agricultural technologies may have some localized but less sensitive, site specific and perhaps reversible environmental impacts if appropriate screening is not done and if such impacts are not considered with regard to their locations or in the design of the subprojects. Some of the negative environmental and social impacts due to these subprojects include:

- Intensification of agricultural activities, due to the irrigated agriculture, may likely introduce new species some of which may be invasive;
- Increased land degradation due to the infrastructure subprojects, if not properly managed;
- Land acquisition and property losses in a some cases;
- Water user conflict between the upstream and downstream community when implementing small scale irrigation subprojects;
- Increased use of agrochemicals that often associated with intensive agricultural practices;
- Rehabilitation of degraded areas may limit community access to some natural resources;
- Use of hazardous laboratory chemicals in animal health services, and soil testing laboratories may cause environmental pollution and human health risk;
- Increased salinity of soil in on the irrigated agriculture due to inefficient water application methods; and
- Introduction of exotic livestock species which may cause reduced livestock diversity, and introduction of new diseases.
- Watershed management subproject may involve the introduction of new species, which if poorly planned could result in the introduction of invasive species.

The potential environmental and social impacts and associated mitigation measures for AGP-II subprojects are indicated in section 5.3 below.

5.2. Environmental and Social Impacts and Their Mitigation Measures

AGP-II will implement a multi-sectoral subproject like road construction, establishment of small-scale and micro-irrigation, market center construction, watershed management, soil fertility management through lime production and application, small scale animal husbandry, fishery, livestock breed improvement, and others. The environmental and social impacts of these subprojects and their associated mitigation measures are presented below.

1. SSI and Micro-irrigation Subprojects

Potential impacts	Potential mitigation measures
• Soil erosion and sedimentation of water bodies from cart away soil, and other soil excavation activities • Environmentally sensitive areas disturbed • Water and soil contamination, and human health problem due to mismanagement of waste generated from construction workers camp • Vector born diseases due to impounding water at the small dam, night storage structures, canals, other water harvesting structures, and quarry site and borrow pits. • Damage to physical cultural resources	• Safe disposal of cart away soil and minimize soil excavation; rehabilitation of areas where soil, excavation done • Identify and avoid forest, wetland habitats, and other ecologically sensitive areas with particular biodiversity • Management and safe disposal of waste from the construction camps • Identify the most environmentally sound source of construction materials that is within budget, develop logging, quarrying and borrowing plans that take into account cumulative effects, decommission/restore area so it is suitable for sustainable use after extraction is completed, design and construct canals that avoid standing water, awareness and training for the community to manage the vector born diseases • Design and operation of dam/reservoir/ponds/other water harvesting structures to decrease habitat for vector • Have construction crews and supervisors be alert for buried historic, religious and cultural objects and provide them with procedures to follow if such objects are discovered
Land acquisition and property losses from impounding dam site, construction of camp, canal, access road, night storage structures, and establishment of quarry site and borrow pits	• Alternative rout alignment to decrease loses; • Timely compensation for the properties and land lost with proper socio-economic survey and documentation of it • Consultation of the PAPs
Loss of life and property of the downstream community, and erosion problem due to Dam failure	Implementing the small dam safety guideline prepared for the project
Loss of property (eg. Cattle,.) and life (eg. children) entering into water harvesting structures/ponds	Fencing the structures; awareness creation for the community about the hazard; alternative site that reduce the hazard
Poor land use practices in catchment areas above the reservoir and other water harvesting structures resulting in increased siltation and loss of storage capacity	Implementing watershed based natural resource management above the dam/reservoir/pond
Soil erosion (furrow, surface) in the command area	Proper design and layout of furrows or field avoiding too steep a gradient; land levelling; and design of terraces on hillside minimizing surface erosion hazard
Deterioration of river water quality below irrigation project and contamination of local ground water (higher salinity, nutrients, agrochemicals) affecting fisheries and downstream users	• Improved water management; improved agricultural practices and control of inputs (particularly biocides and chemical fertilizers) • Implementing soil erosion from the irrigation field to prevent washout of agrochemicals and fertilizer • Control of land use in watershed areas • Prevention and control of pollution sources
Reduced water quantity for downstream users resulting social tension, waterways and wetlands	• Conduct water balance during the feasibility study time taking into account the water demand for the upstream, downstream and the command area • Implement basin based SSI subprojects rather than subproject based • Reassess sufficient amount water to the downstream

Potential impacts	Potential mitigation measures
	community available for irrigation, domestic, cattle and ecological function. The feasibility study should address this. • Proper consultation of community at the upstream, downstream and command area and reach consensus on the solution • Implementing watershed management to enhance the ground water recharge, • Implement water efficient management technologies and practices
Waterlogged soil (Vulnerability to water logging) due to overwatering; inadequate drainage	• Assess soil characteristics and either avoid or provide adequate drainage for areas prone to water logging • Use good irrigation management, matching water demand and supply by location • Design a high water-efficient irrigation system/methods like drip irrigation systems • Encourage farmers to value water resources by establishing a system of water user fees tied to consumption • Use of lined canals or pipes to prevent seepage wherever applicable • Regulation of water application to avoid overwatering (including controlled turn-out to allow cutting off water supply to irrigation ditches)
Salt build-up on irrigated land	• Assess the potential for high salinity and employ aalternative irrigation methods and schedules • Install and maintain subsurface drainage system • Incorporate soil additives. Add gypsum to either the irrigation water or the soil before irrigating • Plant salt-tolerant catch crops
Dry wells for drinking water and irrigation	• Implement different ground water recharge activities like water conservation work/watershed management • Limitation of withdrawal so that it does not exceed “safe yield” (recharge rate) • Encourage farmers to value water resources by establishing a system of water user fees tied to consumption
Existing water sources supply/yield depletion	• Assess water supply and existing demands, and manage sustainability
Sensitive downstream habitats and water bodies	• Identify and avoid effects of diversion or extraction on downstream ecosystems that depend on the surface or groundwater supply

2. Rural Road and Foot Bridge Construction

Potential Impacts	Mitigation measures
During site clearing and excavation activities the following potential impacts may occur: • Produce areas of bare soil which cause erosion, siltation of natural drainage way, changes in natural water flow, and/or damage/disturb to aquatic and environmentally sensitive ecosystems • Landslides, slumps, slips and other mass movement in road cuts; • Cause damage to physical cultural resources	• Minimize disturbance of native flora (vegetation) during site clearing and excavation); minimize the amount of clearing. Clear small areas for active work one at a time where possible, remove large plants and turf without destroying them, and preserve them for replanting in temporary nurseries • Move earth and remove vegetation only during dry periods; install temporary erosion control features when permanent ones will be delayed • Revegetate with recovered plants and other appropriate local flora immediately after equipment is removed from a section of the site • Identify and avoid forest, wetland habitats, and other environmentally sensitive areas with particular biodiversity; protection of most susceptible soil surfaces with mulch; protection of drainage channels with berms, straw or fabric barriers • Installation of sedimentation basins, seeding or planting of erodible surfaces as soon as possible • Have construction crews and supervisors be alert for buried historic, religious and cultural objects and provide them with procedures to follow if such objects are discovered • Ensure that excavation is accompanied by well-engineered drainage; rout alignments to avoid inherently unstable areas • Stabilization of road cuts with structures (concrete walls, dry well masonry, gabions, etc
Upon filling operation the following potential impacts occur: • Block water courses when fill is inappropriately placed • Destroy valuable ecosystems when fill is inappropriately placed • Cause later land subsidence or landslides when fill is inappropriately placed, causing injuries and damages	• Do not fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flows in channels. A culvert may not supply adequate capacity for rare high-volume events • Design so that filling will not be necessary. Transplant as much vegetation and turf as possible • Use good engineering practices. For example, do not use soil alone; first lay a bed of rock and gravel • Balance the cuts and fills (to minimize earthwork movement) whenever possible
Absence of or delaying installation of the drainage structures which: • Cause soil erosion • Degrade water quality • Alter hydrology • Damage valuable ecosystems and habitats	• Install drainage structures wherever necessary during construction instead of after construction, and consider this during planning, design and construction • Stabilize outlet ditches (inside and outside) with small stone riprap and/ or vegetative barriers placed on contour, to dissipate energy and to prevent the creation or enlargement of gullies • Extend run out drains far enough to allow water to dissipate evenly into the ground • Visually spot-check for drainage problems by looking for accumulation of water on road surfaces. Do this immediately after first heavy rains and again at the end of the rainy season. Institute appropriate corrective measures as necessary
Sloped areas and raised roads which: • Cause soil erosion • Degrade water quality • Alter hydrology	• Stabilize slopes by planting vegetation with native species with the best erosion control properties, root strength, site adaptability, and other socially useful properties • Minimize use of vertical road cuts (even though they are easier to

Potential Impacts	Mitigation measures
• Damage valuable ecosystems and habitats	construct and require less space than flatter slopes). Vertical cuts are acceptable in rocky material and in well-cemented soils • Install drainage ditches or berms on up-hill slope to divert water away from road and into streams • Install drainage turnouts at more frequent intervals and check dams to reduce ditch erosion
Construction camp and crew which causes: • Spread communicable diseases including malaria, tuberculosis, and HIV/AIDS via construction crew members who come from outside the region • Generate trash due to lack of solid waste Management • Contaminate surface water and spread • disease via solid waste and feces generated by camp	• Provide temporary sanitation on site, e.g., VIP latrine at the camp site (assuming the water table is low enough and soil and geology is of appropriate composition) • Collect all solid waste (metal, glass, and burnable materials) from all work and living areas. Dispose of waste in local dump. If this is not possible, sell recyclables for reuse/recycling, place organic wastes in well-screened waste pits, covering with soil weekly, bury the remainder (excluding toxic materials) • Provide hygiene and public health training to road crews, including information about transmission of HIV/AIDS and other sexually transmitted diseases
• As a result of material extraction and quarrying and logging the following potential impacts are envisaged: • Damage aquatic ecosystems through erosion and siltation • Spread vector-borne diseases when stagnant water accumulates in active or abandoned quarries or borrow pits and breeds insect vectors • Take land out of other useful production • The quarry may become a safety hazard	• Identify the most environmentally sound source of materials that is within budget • Use material from local road cuts first, but only if it produces a fairly suitable, durable aggregate for either embankment fill or surface stabilization material. • Develop logging, quarrying and borrowing plans that take into account cumulative effects • Monitor adherence to plans and impacts of extraction practices. Modify as necessary • Decommission/restore area so it is suitable for sustainable use after extraction is completed • Install drainage structures to direct water away from pit • Discuss with local community the option of retaining quarry pits as water collection ponds for watering cattle, irrigating crops or similar uses
Potential impacts during operation and maintenance: • Create gulley and standing pools • Create mud holes, potholes • Breed disease vectors in settling basins and retention ponds	• Monitor and maintain drainage structures and ditches, including culverts. Clean out culverts and side channels/run out (leadoff ditches) when they begin to fill with sediment and lose their effectiveness • Fill mud holes and potholes with good quality gravel; remove downed trees and limbs obscuring roadways • Drain the water, and maintain it not to retain water but only silt
Number of stream crossing/disturbances	Minimize water crossings in road location and alignment
Wildlife habitats or populations disturbed	Identify and avoid effects on habitats and migration routes of key species
Land acquisition and property losses from road construction, and establishment of quarry site	• Alternative rout alignment to decrease loses; • Timely compensation for the properties and land lost with proper socio-economic survey and documentation of it • Consultation of the PAPs
Cultural or religious sites disturbed	Identify and avoid cultural or religious sites. If disturbance unavoidable, agreement on mitigating measures must first be reached with stake holders (eg Community, mosque, church). If excavation encounters archaeological artifacts, halt construction and notify relevant authorities, and mitigate properly.

3. Watershed Based Natural Resources Management Subprojects

Potential impacts	Potential mitigation measures
Damage to downstream community and environment (land degradation, land slide, gully formation and flooding) as a result of failure of the physical soil and water conservation structures (Check dam, cut off drain, different terraces, SS Dam and other ground water recharge structures)	• Identify and evaluate the degradation processes • Select the appropriate soil and water conservation technologies to that specific situation (based on climate and watershed characteristics); properly design and follow up the construction of the technologies (flood protection structures-cut off drain, water ways, gully treatment structures-check dam, terraces and others physical structures) to avoid the breach of the structures • Avoid the generalized use of empirical approaches to select and apply soil and water conservation practices for all situations • Plan for the maintenance of the structures and to monitor the same, • Involve/participate local communities throughout the project cycle in order them own the project so that they can contribute to the project and keep it in a sustainable manner
Removal of native plant/tree species	Protect and encourage regeneration of endemic species
Introduced plant/tree species invasion of native species	Ensure non-native species are compatible with native species
Spread of plantation species outside of plantation becoming a nuisance, competing with native species and becoming weeds in agricultural fields.	Species choice to avoid ones that will grow out of control from desired site
Area ex-closures for degraded and upland rehabilitation through natural regeneration and reforestation causes: • Restriction of access to humans and livestock • Risk of involuntary land acquisition and causing relocation of households • Risk of conflict over diverse interests • Loss of economic or livelihood benefits	• Provision of alternatives (options for cut and carry, awareness on alternative forage sources, forage species provision) • Consecutive community consultations and consensus on benefits and costs, responsibilities of management, benefit sharing arrangements • Compensation for loss of land or economic benefits to victims • Prepare RAP/
Introducing new varieties of plant species for forage and food crops that causes risk of introducing new pests and crop diseases with new the germplasm	Conduct quarantine checks and follow national guidelines for introduction of new germplasm

4. Market Center Development and Management Subprojects

Potential impacts	Potential mitigating measures
During site clearing and excavation activities the following potential impacts may occur: • Land degradation/soil erosion • Cause damage to physical cultural resources	• Have construction crews and supervisors be alert for buried historic, religious and cultural objects and provide them with procedures to follow if such objects are discovered; • Identify and avoid cultural or religious sites. If disturbance unavoidable, agreement on mitigating measures must first be reached with stake holders concerned (eg. Community, mosque, church). If excavation encounters archaeological artifacts, halt construction and notify relevant authorities. • Stabilization of excavated areas with structures like retaining wall
New access (road) construction	Ensure drainage controls on new roads and rehabilitate temporary access following subproject implementation
Absence of or delaying installation of the drainage structures which: • Cause soil erosion, gully erosion, land slide • Degrade water quality • Alter hydrology • Damage valuable ecosystems and habitats	• Install drainage structures wherever necessary during construction instead of after construction, and consider this during planning, design and construction • Stabilize outlet ditches (inside and outside) with small stone riprap and/ or vegetative barriers placed on contour, to dissipate energy and to prevent the creation or enlargement of gullies • Extend run out drains far enough to allow water to dissipate evenly into the ground • Visually spot-check for drainage problems by looking for accumulation of water on road surfaces. Do this immediately after first heavy rains and again at the end of the rainy season. Institute appropriate corrective measures as necessary
Wet season soil disturbance that lead land degradation	Schedule construction for the dry season
The generation of construction and demolition waste contaminate soil, groundwater or surface water from demolition waste containing residual amounts of toxic materials (e.g. leaded paint especially for tertiary market center)	Determine whether toxic materials are present. Manage as per the country law to manage the hazardous and solid waste
Increased number of water users due to improvements	Assess water supply and existing demand, and manage sustainably
Contamination of soil and water from sewage/toilet and solid waste	• Site human waste and solid waste disposal systems to avoid surface and groundwater contamination, taking soil characteristics and historical groundwater and surface water conditions into account • Install adequate and appropriate sewage and solid waste disposal systems (e.g., use above-ground composting latrines in areas with high water tables)
Health hazards due to lack of sanitation facilities (water, sewage and solid waste disposal)	• Sanitation facilities must be included in the project design. • Ensure that all sanitation facilities are installed and running before the before the start of the center
Land acquisition and property losses	• Alternative rout alignment to decrease loses; • Timely compensation for the properties and land lost with proper socio-economic survey and documentation of it • Consultation of the PAPs

5. Small Scale Animal Husbandry

Potential impact	Potential mitigation measures
Human health hazards • Introduction of diseases to humans and contamination of water bodies for human use by animal manures and urine; • Pollution and environmental disruption from inappropriate use of pesticide for livestock disease control; • Spreading of disease as a result of contact with contaminated domestic animals/birds, carcasses or slurry.	• Collect and store manure for composting and later application to fields; • Keep manure and urine away from household areas and water bodies; • Consider using a biogas system; • Provide protective clothes to minimize danger to workers applying pesticide; • Avoid overuse of pesticide; • Apply pesticides at recommended times and doses; • Consider integrated pest management; • Sanitize animal housing areas; • Identify and segregate sick animals and develop management procedures for adequate removal and disposal of dead animals).
Water quality problem • Increased muddiness of surface water courses due to soil disturbances from grazing and increased soil erosion; • Contamination of water supplies from leaching or runoff of animal urine and manures.	• Fence off water bodies from grazing animals; • Mange manure and waste properly preventing from entering into water bodies.
Occupational Health and Safety • Exposure to physical hazards; • Exposure to chemical hazards from disinfecting agents, antibiotic, hormonal products to control parasite; • Exposure to biological agents (bacteria, fungi, mites, and viruses transmitted from live animals, manure, animal carcasses, and parasites and ticks).	• Instruct staff in correct livestock care, to reduce the incidence of bites and kicks; • Avoid and control exposure to any pesticide/chemicals; • Train personnel that apply chemicals/pesticide; • Inform workers of potential risks of exposure to biological agents and provide training in recognizing and mitigating those risks; • Provide personal protective equipment to reduce contact with materials potentially containing pathogens.

6. Fishery

Potential impacts	Mitigation measures
Capture fish	
Overexploitation of fisheries stock and long-term degradation of the resource base.	*Fisheries management for optimum sustained yield:* • restricted harvests (minimum size limits, catch quotas, seasonal closures); • clear restrictions (trawl bans, specified net mesh size); • closure of areas (permanent reserves, periodic closures); • limited entry system (licensing, exclusive access); • prohibited practices (use of explosive, drift nets); • Consideration of sustainable traditional fishery practices and incorporation to extent possible in modern fisheries management system.
Capture of non-target species and habitat damage through use of certain equipment and fishing practices.	• Limitation or prohibition of use of such equipments and fishing practices; • Testing and pilot scale use prior large scale introduction of new technologies; • Expanded use of fish by development of new products and markets.
Introduction of exotics leading to degradation of native stock	• Prohibition of exotic introduction; • If it is done, it should be done only with extreme care and only after precautions are in place in fish farming operation.
For culture fish	
Erosion and siltation problems arising in construction phase	• .Restriction of clearance to area needed for ponds; • Pond construction during dry seasons; • Stabilization of exposed soil with grasses or other ground covering, and other physical and biological soil and water conservation measures.
Local depletion of larval and young organisms for pond stocking.	Production of larvae and young in nursery
Water pollution from pond effluent (nutrient-rich and with varying chemical content depending on intensity of pond management).	• Release into water body with adequate dilution and dispersal capability; • Dilution prior to release; • Timing of release with pond of high water; • Shorter retention time of water in pond: more frequent pond water exchange and flushing; • Treatment of water prior to release.
Introduction of exotics with subsequent damage to native stocks by competition, predation, spread of disease and parasites.	• Avoidance of exotic introductions except where adequate knowledge of biology and life history of species indicates low risk of negative impacts and where adequate safeguards against escape is taken;

Potential impacts	Mitigation measures
	• Regular monitoring for diseases and parasite; if present and spreading, elimination of infected populations; • Consideration of using sterile hybrids.
Spread of disease in aquaculture stocks and into natural stocks when dock becomes too dense.	• Monitoring of disease incidence; • Limitation of numbers when disease is positively correlated with fish; • If disease spreads, limitation of diseased individuals.
Land use and agricultural practices in watersheds affecting sediment content and water quality.	• Integrated watershed planning and management; • Close coordination between fisheries and government agencies responsible for resource management in watersheds to alert them to impacts on fisheries.
Pond failure	• Proper sitting, design and construction • Proper pond management (flushing or exchange of pond water which must be done frequently enough to prevent the deterioration of water quality in the pond)
Life and property loss entering into the pond	Fencing and training the community

7. Production of Lime

AGP-II provides supports to increase the ***production of lime*** as part of the soil fertility management support. Production of lime involves extraction (quarrying) of the raw materials (limestone/dolomite) from the environment by clearing the site including the removal of vegetation, top soil; crushing and milling the crushed materials. Quarrying activities cause social and environmental impact. In particular, it is often necessary to blast rocks with explosives in order to extract material for processing which gives rise to noise pollution, air pollution, erosion, sedimentation of water bodies, damage to biodiversity and habitat destruction. Crushing and milling process also has environmental and health problem. The health impact on farmers during the application of the lime is also a critical problem. It needs special attention on reducing or avoiding the impact.

Potential Impacts	Potential Mitigation Measure
Produce areas of bare soil which cause erosion, siltation,	• Design infrastructure so that it will create least impact • Minimize disturbance of native flora during construction • Remove, without destroying, large plants and ground cover where possible • Use erosion control measures • Replant recovered plants and local flora as soon as possible
Health problem from: • dust from quarry sites • blasting of quarry site • crushing machine noise	• The workers continuously exposed to dust should be provided with some protective devices like dust mask and to prevent respiratory disorders • The workers continuously exposed to a high noise should also be provided with ear muffs/ ear plugs • Introduction of controlled blasting operations • Extension of education and training facilities to the workers

Potential Impacts	Potential Mitigation Measure
	on safety issues related to their work • Provision of safety materials to protect workers from physical damage
Respiratory health problem on farmers during application on the field	• Equip farmers with protection measures/equipments • Train farmers how and when to apply the lime
Wash-off from the limestone dumps will lead to the adjoining surface water body which increase water alkalinity, and increase in suspended solids	Implement soil erosion control measures on farmers field
Spread of vector-borne diseases when stagnant water accumulates in active or abandoned quarries or borrow pits and breeds insect vectors	• Develop logging, quarrying and borrowing plans that take into account cumulative effects • Monitor adherence to plans and impacts of extraction practices • Fill in quarries and pits before abandoning • Control runoff into pit
Contamination of soil and water from sewage and solid waste, and health impact from the sanitary problem at the quarry and production site	• Proper sanitary facilities should be taken care so that employees do not suffer from any health ailment. The employees shall also be made aware of general sanitary practices • Site human waste and solid waste disposal systems to avoid surface and groundwater contamination
Physical Cultural Resources impacted	Identify and avoid cultural or religious sites. If disturbance unavoidable, agreement on mitigating measures must first be reached with stake holders concerned (eg. Community, mosque, church). If excavation encounters archaeological artifacts, halt construction and notify relevant authorities.
Land Acquisition and property losses for quarry sites, production plant site, etc	• Alternative rout alignment to decrease loses; • Timely compensation for the properties and land lost with proper socio-economic survey and documentation of it • Consultation of the PAPs

8. Livestock breed improvement

AGP-II will support to provide improved technologies and livestock breeds to improve the productivity of the livestock sector. The program will finance for the provision of exotic cows, heifers, exotic ewes, improved rams and bulls.

The environmental policy of Ethiopia under section 3.3 (c) states that all biological material which is self-regenerative and impossible to control once allowed to get out of control may result in the most insidious and damaging form of pollution which is biological pollution, thus the importation and use of biological material including those genetically engineered should be under stringent regulations. In the environmental impact assessment guideline document (Federal EPA, 2000) it is indicated that the introduction of new breed, species of crops, seeds or animals fall under ***schedule 1*** activity which may have adverse and significant environmental impacts, and may, therefore, require full ESIA.

Potential environmental impacts

The introduction of exotic livestock breed may result in loss of genetic diversity in livestock species. Breeds may have traits conferring resistance to emergent or future pathogens, or have other favorable

adaptations to local environments. The consistent replacement of local breeds with more productive imported ones can contribute to the extinction of that breed and of all the genetic diversity harbored within its population. The introduction of exotic livestock breed may also result in the introduction of new pathology.

Potential mitigation measures

Introduction of a new breed into an area should be approached with caution. The new breed may bring with it diseases that can decimate local livestock herds and wildlife. The long term full costs and benefits of introducing a given new livestock species into a particular environment should be assessed. The following issues have to be taken into account before introducing the exotic breed.

- Quarantine law has to be seriously followed to avoid the potential adverse consequences of exotic species introduction,
- Thoroughly research new species of livestock. Determine their grazing/browsing preferences and compare them to those of current livestock species,
- Pilot-test new breeds and species before introducing them in a broad program, and monitor their impacts over time,
- If local breeds can meet specified needs, strongly consider their use. In particular, even if local breed is a relatively low producer, weigh this drawback against the breed's disease resistance and hardiness in the local environment,
- Evaluate the risks of introducing new diseases that might be transferred to wildlife,

9. Laboratory Chemicals/Reagents

AGP-II provides chemicals/reagents for central and regional soil testing laboratories to improve ***improved fertilizer*** use based on soil analysis and to assist with the reclamation of problem soils such as acid soils.
For the analysis of soil in the laboratory, chemicals/reagents will be utilized. Most of the time these chemicals are hazardous in nature; and unless otherwise handled, stored, transported, used and disposed safely, they may have a serious problem to the environment and the human being including staffs who work in the laboratory.

AGP-II, though does not support for drug purchase, strengthens the ***animal health posts, clinics, regional animal health laboratories*** and ***Artificial Insemination service*** centres by capacitating them in terms of training, equipment and laboratory chemicals/reagents purchase.

These laboratory chemicals/reagents which are used for the analysis of different pathogens, as they are hazardous in nature, have significant environmental and health impacts. They need proper handling, utilization, storage, transport and disposal. A waste from animal health care clinics and post, which have similar characteristics with that of domestic waste and generated in the laboratory, but contaminated with hazardous chemicals/waste and sample fluid (blood) of the animals become hazardous and infectious, and need proper management like any hazardous and infectious wastes. All ranges of the chemical and chemical waste management technologies and principles have to be followed and implemented.

The proper identification of the environmental impacts related to laboratory operation is important so as to define effective mitigation and management practices. This has a beneficial effect not only on overall environmental performance but also on the safety and health of the laboratory personnel and related community.

Potential environmental impacts of laboratory chemicals and associated chemically loaded wastes
Although animal healthcare posts and clinics activities provide many important benefits to the community, they can also unintentionally do great harm through poor design and management of waste management systems. The waste generated from these institutions pose serious problem. If handled, treated or disposed of incorrectly it can spread disease, poison people, livestock, wild animals, plants and whole ecosystems.

Water Pollution
Animal health service and soil testing laboratories use a wide range of chemicals, disinfectants and samples. Direct release, without treatment and segregation of any of these chemicals and hazardous wastes to the drainage/sewer system without treatment can contaminate water bodies and create health risks for the general public, directly or indirectly. Such pollution is also detrimental to aquatic life.

Air Pollution
The operation of laboratories may result in a number of hazardous emissions to the air from fume hoods and vents, sterilization/disinfection technologies; refrigerants (Ozone depleting substances) and treatment technologies (incinerators, if any). Open and incomplete burning of wastes can create hazardous air emissions such as dioxins.

Soil Contamination
The disposal of untreated and un-segregated solid waste (containing organic, degradable mixed with hazardous chemicals) can result in contamination of the soil and the solid waste system.

Handling & Disposal of Chemicals and hazardous wastes
Improper handling of hazardous chemicals is a health hazard for the laboratory workers and its indiscriminate disposal can have environmental risks as detailed above. The same applies for other substances, such as untreated and expired chemicals, treated samples of body fluid of animals and soil samples, and sharps (needles, syringes, broken laboratory glassware etc). Indiscriminate dumping of wastes can also result in illegal and dangerous recycling of chemicals, sharps and other substances, which can become a public health hazard.

Potential mitigation measures for laboratory chemicals/reagents and associated wastes
Many of the pollution problems associated with laboratory wastes stem from the types of materials and chemicals used. Establishing good purchasing and procurement practices is the first step in effective pollution control. Ensuring the selection and implementation of environmentally sound and cost-effective treatment technologies is an important element in the process. The option for final disposal of infectious and hazardous will be based on decided in consultation with the environmental protection agency of the region. Planning of a waste management system will take into consideration pollution prevention, waste minimization and recycling activities.

The following potential mitigation measures in general are envisage

- Have a plan in place for the use, handling, storage and disposal of hazardous materials and waste;
- Maintain an inventory of the types and locations of hazardous materials and waste;
- Each laboratory need to have health and occupational safety guideline;
- Have safety requirements in place for the handling, storage, and response to spills or exposures;
- Clearly segregate and label hazardous materials and waste;
- Treat and dispose hazardous materials and waste in accordance with applicable laws and procedures

10. Pest Management

Farmers use pesticide chemicals (herbicide, insecticide, fungicide and others) to increase agricultural productivity. Pesticides have played an important role in creating and sustaining the agricultural revolution. Because of their toxic nature, however, pesticides pose a risk to humans, animals, and the environment when they are not handled properly. Absence of safety precautions can result in accidents, affecting the producer, the employees, their families, and farm animals, sometimes with serious consequences. Those at greatest risk are those who experience the greatest exposures— typically smaller-holder farmers, farm workers and their families. These populations are also often the poorest members of society. Larger-holders are more likely to have received training on pesticide risk avoidance; however, laborers hired by them may not. The unsafe use of pesticide product also poses serious negative impact on the environment (soil, water, plant, wildlife, microorganisms, and others). As indicated in section 2.4 (description of the environment) above of this ESMF, there are parks, water bodies (lakes, springs, rivers), flora and fauna of different species found in the AGP-II intervention areas. Unsafe use and management of pesticide will affect these biophysical environments.

Potential pesticide impacts on environmental and social components

Pesticide impact on	Potential impact
Water	• the death of fish and also have other ecological impacts • change in the organoleptic properties of water (its odor, taste) • negative effect on the process of oxygen formation by phytoplankton, on the vital activities of the inhabitants of the water ecosystems • impacts that transmitted along the food chains, and accumulate in food products • direct toxic action (acute or chronic toxicity) and indirectly (dimensioning of the content of oxygen dissolved in the water, a change in the chemical composition of water, extermination of water insects, etc) • disturbing aquatic ecology • Adverse effects on wetlands aquatic flora, etc.
Air: pesticides related air pollutants and their effects on health	• Respiratory illness, including chronic bronchitis and asthma; heart diseases • Heart diseases; respiratory problems including pulmonary emphysema, cancer, eye burning, headache, etc. • Pneumoconiosis, restrictive lung diseases, asthma, cancer, etc. • Lung irritation, viral infection, airway resistance, chest tightness, etc. • It causes immunotoxicity, carcinogenicity, asthma, anemia, unconsciousness etc. • Impaired lung function, chest pains, coughing, irritation of eyes, nose etc. • CO poisoning cause cherry lips, unconsciousness, death by asphyxiation etc. • It causes decreased hemoglobin synthesis, anemia, damage the nervous and renal (kidney) systems etc.
Soil	• Kill and severely reduce the essential soil macro- and microorganisms, including earthworms, insects, spiders, mites, fungi, essential mycorrhizae, and bacteria, thus reducing or stopping important nutrient cycling • Accidental spills on soil, which are usually associated with pesticide mixing and loading operations, can result in localized but severe soil contamination if not contained and dealt with rapidly and adequately
Human health	• Acute poisoning (death, light to severe sickness, respiratory problems, etc.) • Chronic poisoning (cancer, birth defects, reproductive disorders, skin problems, impairment of immune system capabilities, etc.)
Wild life and livestock	• population decline through the use of pesticides over large areas • Reproductive effect such as egg shell thinning , deformity and birth defects

Pesticide impact on	Potential impact
(non-target species)	• Metabolic changes • tumors and cancer • behavioral changes • abnormally functioning thyroid glands • Sub-lethal or lethal poisoning of mammals and other vertebrate • through extinction of the pest population -losses of food sources for many birds; particularly migratory species • toxicity to bees which are pollinators, with adverse effects on the production of certain crops • long-term negative effects on the reproductive processes of birds of prey and aquatic species of certain insecticides eg DDT) • high mobility and biological amplification of persistent pesticides
Socio-Economic Impact	*Positive impacts* • increased income and/or security of yield for farmers • Increased employment opportunities and • Improved food supply *Negative impacts* • Risk of human contamination to dealers, formulators, applicators and farmers • Health risks and associated economic impacts from contamination of surface; and ground potable water supplies contaminated by pesticides containing wastes • Acute health effects resulting from contamination of food and water stored in pesticide containers, from the transportation of pesticide and food stuffs in the same transportation means • Health risks from pesticide residues remaining on a crop after application • Loss of revenue from cash crops if these cannot be sold on world markets because of illegal residue levels • Crop losses due to the emergence of new and/or more resistant pests (insects, plant pathogenic fungi, bacteria), spread of disease vectors and emergence of a 'pesticide treadmill', whereby farmers obliged to pay more and more for a control program that does less and less good • In general short term benefit long term side effect

Potential mitigation measures

The Government of Ethiopia supports the use of integrated pest management approach (IPM) to reduce reliance on agricultural chemicals. Integrated Pest Management (IPM) refers to a mix of farmer-driven, ecologically based pest control practices that seek to reduce reliance on synthetic chemical pesticides. It involves (a) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them, (b) relying, to the extent possible, on nonchemical measures to keep pest populations low; and (c) selecting and applying pesticides, when they have to be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment. Integrated pest management (IPM) is being promoted throughout the world as an alternative approach to pest management. Core elements of all IPM approaches are minimizing pesticide use and minimizing health and environmental risk when pesticides are used.

Model Approach to IPM

- Evaluate pests' impact before control programs are implemented, to identify pests, size of problems and possible natural controls
- Evaluate non-pesticide management options, including a range of preventive measures and alternative pest control methods (physical, mechanical, and biochemical)

- Evaluate whether synthetic pesticides are necessary or not, whether less toxic varieties are available for the purpose, and how to minimize exposure for users and the environment

If there are no feasible alternatives to pesticides, take the following measures to mitigate and reduce their risks to human health and the environment. Note that risk is a function of both toxicity and exposure. Reducing risk means (1) selecting less toxic pesticides and (2) selecting pesticides that will lead to the least human exposure before, during and after use.

1. Screening Pesticides

The use of any pesticide should be based on an assessment of the nature and degree of associated risks, taking into account the intended users. With respect to the classification of pesticides and their specific formulations, the Bank refers to the World Health Organization's *Recommended Classification* of *Pesticides* by *Hazard and Guidelines to Classification.*

The Bank requires that the following criteria apply to the selection and use of pesticides:

a. They must have negligible adverse human health effects.
b. They must be shown to be effective against the target species.
c. They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed at minimizing damage to natural enemies. Pesticides used in public health programs must be demonstrably safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them.
d. Their use must take into account the need to prevent the development of resistance in pests.
e. They do not fall in WHO classes **IA** and IB, or formulations of products in Class II if (a) country lacks restrictions on their distribution and use; or (b) they are likely be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

2. Reduce exposure time or the degree of exposure

Before using *(transporting, packaging and storing)*

Transporting

- Separate pesticides from other materials being transported
- avoid private distribution—it's dangerous
- Never transport leaking or badly deteriorated containers
- Do not transport food, beverages or animal feed together with pesticides. Load and unload pesticides very carefully to minimize the chance of dropping containers.

Packaging

- follow international and national norms and guidelines
- use packaging adapted to needs
- eliminate re-use of packaging materials (even when cleaned, pesticide containers are too dangerous to re-use
- The container for the product shall be of sufficient strength and shall provide all the necessary protection against compaction, atmospheric moisture, oxidation, loss by evaporation and contamination to ensure that the product suffers no deterioration under normal conditions of transit and storage, etc.

Storing

- develop strict guidelines for village-level storage
- ensure permanent, well-marked labeling
- follow and respect national norms
- follow and respect FAO norms
- use appropriate language and approved pictograms
- use and respect appropriate toxicology color
- should be located far from human dwellings, and personal use items
- should be sited far from rivers and bodies of water, to prevent chemical contamination from entering and poisoning the water
- should not be sited in an area subject to flooding, especially during seasonal rains
- be secured from public access
- have a warning sign affixed to the exterior door, entrance or gate of the storage facility
- have a floor or base that is protected from pesticide absorption

Labeling

The purpose of a labeling is to convey a message about what the product is, who makes it and how it may be used safely and effectively. Label should specifically indicate:

- hazard symbol
- Trade and chemical name
- Ingredient statement
- Type of formulation
- Net content of the package
- purpose for which it is to be used
- Name and address of manufacturer, distributor
- Registration or license number
- directions for use
- safety precautions
- warnings and statements of good practice
- Hazards to humans and domestic animals
- Environmental hazards
- Physical and chemical hazards
- first-aid instructions and advice to health personnel
- Storage and disposal directions
- Warranty statement

During use *(training should be continuous for farmers, application, protective equipment and clothing, mixing of chemicals, and others)*

Pre-application

- Read and understand labeled instructions and any other information provided with either the agrochemical, the application equipment or the protective clothing
- Assess the risks of application to people, animals and the environment and decide what action is necessary to reduce or eliminate them
- Ensure that the user is competent and that he or she has received effective training in application techniques and the precautions to be observed
- Arrange health monitoring as may be necessary for certain hazardous agrochemicals based on their frequency of use
- Check application equipment to ensure that it operates satisfactorily without leaking or spilling and is calibrated for the necessary application rates
- Check that protective clothing and other safety equipment including breathing apparatus, if required, is complete, is of the correct quality and is in good condition. Replace any items that are worn or missing. And is in good condition. Replace any items that are worn or missing

- Decide how the work is going to be done and set up an action plan to cover its implementation, together with any emergencies that may arise.
- Check that weather conditions are satisfactory, particularly to avoid excessive wind speeds and consequent spray drift
- Ensure the safe disposal of empty containers, tank washings and surplus pesticides

During application

- Do not apply agrochemicals without adequate training
- Wear appropriate protective clothing as prescribed on the label or information sheet for handling concentrated products
- Avoid blow-back from granule or powdered materials when transferring container contents into the application unit. A slow, steady release causes least disturbance of air and reduces the risk of particles becoming airborne and being inhaled
- Mix only the correct amount of agrochemical required for a particular task so as to avoid the need to dispose of any surplus.
- Handle containers carefully to prevent gurgling or spillage during pouring into an applicator. Pour correctly from large containers with the spout uppermost so as to allow air to flow into the container at the same rate as the contents flow out
- If two or more agrochemicals have to be mixed, ensure that they are compatible and without risk of a chemical reaction that would cause a "tank mix" operator hazard
- Do not eat, drink or smoke while applying agrochemicals
- Ensure that dangerous practices such as putting a blocked nozzle to the mouth to blow it clear are prohibited. Clean the nozzle with water or a soft probe, such as a grass stem
- Do not allow other workers in the field, particularly when pesticides are being applied. Take particular care to observe that children are neither allowed to spray nor are exposed to pesticides
- Take notice of changing weather conditions, such as an increase in wind speed. This would cause drift and could blow the spray towards sensitive areas such as a drinking-water supply, resulting in health hazards. It may also blow the spray towards the operator, causing an inhalation hazard.

After using *(k*now, respect and enforce any exclusion period after application-time during which humans, livestock, etc., must be kept away from the treated area; assure proper cleaning and rinsing off of; and develop a workable monitoring and evaluation system).

The following precautions have to be followed after applying the pesticide:

- Thoroughly wash hands, face and neck as well as other parts of the body which may have become contaminated. If gloves have been worn, wash them before removal
- Return unused pesticide to safe storage and safely dispose of empty containers and any surplus in the application equipment
- Decontaminate application equipment by washing it thoroughly. The washings should be drained into a soak-away or similar chamber to be safely confined and without risk to the environment.
- Decontaminate protective clothing by thoroughly washing items such as apron, boots and face shield. Launder the work clothing each day after spraying. Gloves should be washed inside and out and allowed to dry. Respiratory protection equipment should be wiped clean
- Bathe or wash thoroughly again after completing the above four actions.

Disposal of unused and obsolete pesticide, and empty pesticide containers
The safe management and disposal of pesticide-related waste (*unused and obsolete pesticide, and empty pesticide container*) should be provided and coordinated by regulatory authorities, pesticide distributors and suppliers. Other organizations that support and advise pesticide users, such as extension and health promotion services, non-governmental organizations (NGOs), agricultural colleges and schools, also have important roles to play.

Governments and their agencies, including ministries of agriculture, health, environment and education, are responsible for regulating the manufacture, import, distribution and use of pesticides. These responsibilities should be extended to include the management of pesticide-related waste products, including empty containers, which are often overlooked.

A mechanism has to be designed to collect all empty pesticide containers from farmers and safely disposed and never reused. It is extremely dangerous to use them for anything else. Consult the pesticide label, the manufacturer, or the manufacturer's representative for specific recommendations regarding container cleanup and disposal.
Management plan has to be prepared when there is the plan to use pesticide to mitigate all the impacts associated with the pesticide using the above mentioned measures. The implementation of the plan has to be supervised, monitored and audited, and monitoring plan has to be prepared.

5.3. Cumulative Impacts

Some of the AGP-II subprojects may result in cumulative impacts on natural resources unless due to attention is not given. Stakeholder consultations were done with Woreda and regional level AGP-II implementing agencies especially regional water resources/Irrigation Development bureaus on issues related to cumulative impacts of AGP-II subprojects. During the implementation support supervision and monitoring at field level in the AGP-I implementation period, there are potential cumulative impacts especially related to small scale and micro-irrigation subprojects, and increased use of pesticide. The following major cumulative impacts are observed and envisaged.

- ✓ The regional and Woreda participants of the stakeholder consultations mentioned that there are potential cumulative environmental and social impacts of AGP and with other projects working on irrigation water development and management projects/subprojects. In some cases, a number of shallow wells have been constructed here and there in a particular location without sufficient study on their feasibility. As a result of this, in some areas, there is sign of lowering water table. In other cases, there are river diversion small scale irrigation subprojects implemented by AGP, and other non-AGP projects diverting the same river in a number of sites creating conflict among the irrigation water users found at different command areas. The other participant indicated that there are real cases that a number of SSI subprojects (river diversion subprojects) implemented on the same river resulting social conflicts. There are also cases which SSI subprojects share the same water sources for water supply and creating environmental and social concern. If such problems here and there not managed timely in a sustainable manner, it will be social problems and the sustainability of these subprojects will be seriously affected.

  It is recommended by the participants of the consultation that: the implementation of the irrigation subprojects should be with proper planning and study of the potential water resources especially basin based study rather than working on subproject based study; working more on the water recharge mechanisms like implementation of watershed

management activities in integration with SSI subprojects to enhance the ground water potential establishing strong sector integration; diversifying/shifting to other water resource alternatives like micro-dams; promoting and implementing water efficient technologies; and giving more attention on the planning and study of water resources development.

- ✓ Increased use of agrochemicals especially pesticide may have downstream impacts polluting downstream water bodies, affecting the health of the health of the community and environment. Participants of the consultations indicated that IPM based crop protection approaches have to be followed. Participants also mentioned that capacity building training on IPM and safe pesticide product management should be done continuously at different level especially focusing to farmers, development agents and Woreda crop protection experts. Strengthening institutions working on crop protection is one aspect in this regard to safeguard the environment and the health of the community.

Pest Management (OP/BP 4.09)

5.3.1. Policy, Regulatory Frameworks and Institutional Capacity in Ethiopia Related to Pest Management

Ethiopia has no standalone crop protection and IPM policy. However, it has rural development strategies and policies that clearly indicated the development should ensure sustainable development in which the appropriate use crop protection work is one. The environmental policy of Ethiopia in its agriculture sector policy also state that to base, where possible, increased agricultural production on sustainably improving and intensifying existing farming systems by developing and disseminating technologies which are biologically stable, appropriate under the prevailing environmental and socio-cultural conditions for farmers, economically viable and environmentally beneficial. This is one demonstration the country has policy direction to use environmentally safe crop protection measures for the sustainable agriculture.

To manage both regular and migratory pests, the Ministry of Agriculture has established plant health general directorate and crop protection directorate under it. The MoA has also been recruiting additional staffs for the directorates. In this regard, the ministry has been providing comprehensive crop protection training at different levels including farmers. Agricultural Universities have also been giving specialized graduate level program in crop protection related disciplines.

Recognizing the intolerable magnitude of losses due to pests and the need to introduce ecologically preferable, socially acceptable, cost effective, rational and sustainable pest management technologies to farmers, IPM has been accepted in Ethiopia as a strategy for tackling the problem. The Ministry of Agriculture, through its Plant Health Regulatory Directorate, has drafted Guideline on the Implementation of IPM for Small-Scale Irrigation. This guideline is prepared based on the legal frameworks that are enacted in Ethiopia related to pesticide management in particular, and to environmental and social issues in general.

Currently, the MoA has been promoting IPM based crop protection. It has been implementing projects like Pesticide Risk Reduction protects and African Stockpile Project. AGP has been also working on scaling up of the IPM (when implementing its subprojects that may use pesticide) with the technical support being received from the FAO, Ethiopia Country office. The government of Ethiopia has been working to put in place a sustainable pest management support service with a clear focus in promoting IPM, and the policy direction/focus on reach in at a stage

to implement fully ecologically based IPM. Farmer Field School, which is community based decision making approach to solve agricultural problems on a daily bases, has been accepted as an approach to facilitate pest management in the smallholder agriculture in the country at large. In line with this an IPM piloting program is up and running in the AGP technical support project being implemented by FAO Ethiopia.

Ethiopian Institute of Agricultural Research (EIAR), Regional Agricultural Research Institutes and Agricultural Universities have been working in crop protection technologies generation, and adaptation. The MoA, regional bureaus of agriculture through the regional plant health clinics, and NGOs have been providing farmers with pest management related trainings and promotion of IPM has been the central focus of all recently provided trainings. Currently in Ethiopia, there are no private extension service providers and we don't foresee such service to be privatized for some years to come due to a number of reasons.

5.3.2. Regulatory Frameworks and Institutional Capacity for the control of the distribution and use of pesticide

The Federal Democratic Republic of Ethiopia has developed policies and legal frameworks related to safe production and use of pesticides. Ethiopia has also accepted different international agreement related to pesticides. The following is highlights of major policies and legal frameworks, which required considerations in safe management of pesticides.

- *Pesticide Registration and Control (Proclamation No. 674/2010)*

To minimize the adverse effect of pesticide use to human beings, animals, plant and the environment, the country has enacted Pesticide Registration and Control Proclamation (No. 674/2010). The proclamation aims to regulate the manufacture, formulation, import, export, transport, storage, distribution, sale, use and disposal of pesticide. Before this proclamation was enacted, there was Pesticide Registration and Control decree. Though the proclamation was enacted in 2010, still the directive and guidelines to enforce the proclamation is not yet finalized. The MoA, under its Plant Health Regulatory Directorate (PHRD) is working on the development of the directive and guidelines and it is its final stage.

The pesticide regulation is enacted and enforced by the government through registration and monitoring. The distribution of the pesticide is done by the registrant, whereas, the MoA monitor the marketing and use of pesticides. The registration of pesticide is functioning effectively, but the regulation of the application and storage of pesticides has been very much limited.

There is a functioning pesticide licensing system for traders, mass importers, local dealers and retailer. All are licensed and the system regularly tries to monitor the stocking and the sale of pesticide by the different dealers. As much as possible, the government is working to avoid accumulation of obsolete pesticide.

Guidelines are produced and distributed to the grass root level to help them monitor pesticide distribution, application, handling and storage. But there are enough data to compliment that the guidelines have not been reaching all the smallholder farmers who have been using pesticides.

- *Environmental Policy of Ethiopia*

In the sectoral environmental policies that relates to Soil Husbandry and Sustainable Agriculture the emphasis is on:

- The use of biological and cultural methods in an integrated manner to control pest and diseases,
- To safeguard human and environmental health by adequately regulate the agricultural chemicals.

The other policies, proclamation and guidelines that address the safe use and management pesticide and chemicals include *the Agricultural Policy, Environmental impact assessment guideline on pesticide, the Environmental Pollution Control proclamation (No 300/2002), labor proclamation (42/93), and Public health proclamation (200/2000) among others.*

- ***International Agreement***

Ethiopia has ratified four international conventions that have importance in pesticides managements. Consideration of these conventions is therefore essential when managing pests and pesticide products. These conventions include: *Rotterdam convention, Prior Informed Consent (PIC), Basel convention, Stockholm convention (POPs), and Bamako Convention (1991).*

The country has proclamation and regulation for the registration and control of pesticide. The MoA through its plant health regulatory directorate is responsible for the registration and control of pesticide. The pesticide regulation is enacted and enforced by the government through registration and monitoring. The distribution of the pesticide is done by the registrant, whereas, the MoA monitor the marketing and use of pesticides. The registration of pesticide is functioning effectively, but the regulation of the application and storage of pesticides has been very much limited.

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5.3.3. Pest Management Plan

If environmental and safety hazards are identified or expected from the use of pesticide chemicals, the project will prepare Pest Management Plans (PMPs), which Integrated Pest Management (IPM) is integral part of it, prior to commencement of the sub-projects.
A pest management plan (PMP) is based on field evaluations of local conditions, and is best conducted by appropriate technical specialists with experience in participatory IPM. It determines whether current or proposed use of pesticides is justified under an IPM approach, and whether it is economic. *Above all, a PMP emphasizes support for good, sustainable agricultural practice rather than mere compliance with pesticide management regulations.*

A PMP identifies the main pest problems and their contexts (ecological, agricultural, public health, economic, and institutional), and develops specific operational' plans to address these problems. Hazards associated with the transport, storage, handling, use and disposal of pesticides including empty pesticide containers are identified and assessed. Measures are provided to reduce these hazards to a level that can be managed by the users of the products concerned. The elements of PMP are indicated in Annex 6.

6. ESMF Implementation Monitoring and Follow Up

After the required safeguard instruments (it can be either ESIA, and/or ESMP, and/or PMP, and/or RAP/ prepared, reviewed and approved, and environmental and social clearance received from EPLAUA, the relevant implementing agencies (either at Woreda or regional or both level) which the subproject refers to are the main responsible bodies to implement and ensure the implementation of the mitigation measures identified and planned in the ESMPs and/or ESIAs, RAPs/s, and PMP. The community has also contribution in the implementation of mitigation measures especially watershed management subprojects and others are implemented either in cash, or labor or both.

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 AGP-II 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.

6.1. 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 process; capacity building processes; reporting; and others. The monitoring is done by AGP-II implementing agencies at Woreda and regional level implementing the ESMP, RAP/, and PMP; Woreda and regional EPLAUA; regional and federal AGP-II 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.

6.2. 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 above 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 AGP-II. The woreda and regional 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-projects and household interventions have been successful in such a way that the mitigation measures are properly in placed and environmental and social condition positively maintained. See annex 8 for the detail description of monitoring and evaluation of ESMF implementation.

6.3. 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 AGP-II. 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 and percentage of subprojects for which environmental and social issues are integrated in to the project cycle;*
3. *Environmental and social screening checklist filled or not;*
4. *Environmental and Social Management Plan (ESMP) was prepared or not;*
5. *Environmental enhancement and adverse impact mitigation measures mentioned in Environmental and Social Management Plan have been incorporated and considered during project planning, design and site selection;*
6. *Implementation o f the mitigation measures identified and planned in the ESMP;*
7. *Places for collection of construction materials (quarry sites, borrow pits), collection/operation method and its environmental consequences;*
8. *Disposal method, site of spoil and construction wastes disposal and its environmental and social consequences;*
9. *Increase in landslide, soil erosion and slope instability due construction activities;*
10. *Impact on water quality and disruption of natural water courses, drainage work and its consequences;*
11. *Provision of appropriate compensation for land acquisition and property loses, and their proper documentation;*
12. *Conflict in water use right between the upstream and downstream water user community during water source selection (check whether balance is done or not, sufficient water is allocated for both community and ecological services);*
13. *Documentation of community consultation both the upstream and downstream including their opinions;*
14. *Water quality is suitable or not for irrigation purpose, water can be supplied or not as per irrigation demand; regular supply of water as per the capacity of the irrigation project;*
15. *Impact on aquatic life in downstream of the water source from which water is diverted for irrigation purpose; and*
16. *Water logging and salinity problem because of irrigation subprojects;*

7. Grievance Redress Mechanism (GRM)

According to Article 17 of Proclamation on Environmental Impact Assessment (proclamation no. 299/2000); any person dissatisfied with the authorization or monitoring or any decision of the Authority or the relevant regional environmental agency regarding the project may submit a grievance notice to the head of the Authority or the relevant regional environmental agency, as may be appropriate. The decision of the head of the Authority or relevant regional environmental agency shall, as provided above, be issued within 30 days following the receipt of the grievance. The Bank will also require 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, in particular about the environmental and social performance of the client.

Grievance redress mechanisms provide a way to provide an effective avenue for expressing concerns and achieving remedies for communities, promote a mutually constructive relationship and enhance the achievement of project development objectives. GRMs are increasingly important for development projects where ongoing risks or adverse impacts are anticipated. They serve as a way to prevent and address community concerns, reduce risk, and assist larger processes that create positive social change. GRMs provide a formal avenue for affected people or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed environmental and social impacts. People adversely affected (or about to be affected) by a development project will raise their grievances and dissatisfactions about actual or perceived environmental and social impacts in order to find a satisfactory solution. Not only should affected persons (APs) be able to raise their grievances and be given an adequate hearing, but also satisfactory solutions should be found that mutually benefit both the APs and the project. It is equally important that APs have access to legitimate, reliable, transparent, and efficient institutional mechanisms that are responsive to their complaints.

Objectives of AGP-II Grievance Redress Mechanism

The objective of the GRM is to ensure that the views and concerns of those affected by AGP-II activities are heard and acted upon in a timely, effective and transparent manner.

Principles of GRM:

- ✓ Protect beneficiaries/partners rights to comment and complain;
- ✓ Neutrality and equity while handling complaints;
- ✓ Timing: short cycle, quick response to the critical complaints;
- ✓ Transparency: Partners will be aware of the procedures; understand its purpose, have sufficient information on how to access it and understand how it works;
- ✓ Confidentiality: Create an environment in which people are more likely to raise concerns, complain or stand in witness. Confidentiality assures that any information given is restricted to a limited number of people and that it is not disseminated wider, therefore offering an element of protection and security to the complainant;
- ✓ Accessibility: The GRM will be easily accessed by as many people as possible within any stakeholder in the place where projects/subprojects are being implemented;
- ✓ Mutual responsibility between AGP-II and complainants to insure fair, accurate, and responsible behavior.

Grievance Handling Procedure for AGP-II

Woreda/district Level

If the community/project affected people or other interested parties have compliant on the unaddressed environmental and social impacts/damage/injuries as a result of AGP-II subprojects

implemented ate Woreda level/capacity, they submit their issues to the Woreda EPLAUA. The Woreda EPLAUA, having filed checking/verification of complaints, will provide response effectively and in transparent manner. If the compliant are not satisfied with the response from the Woreda EPLAUA, they go to regional EPLAUA. Woreda EPLAUA also refers the cases if the issues are beyond its capacity to resolve.

Regional Level

If there are compliant from the community/project affected people or other interested parties due to AGP-II subprojects which are implemented by regional AGP-II IAs; or if the cases are referred from Woreda EPLAUA, the Regional EPLAUA will give response to the community and other interested parties within 15 days after conducting field investigation.

Federal level

Since AGP-II is implemented mainly regional and Woreda level, the grievance cases will be handled at regional and Woreda level. If there are cases, for example cross regional subprojects which may cause grievance, they will be handled by the federal AGP-II PCU. The federal AGP-II PCU will give response to the compliant within 30 days after conducting field investigation. Complainants may also pursue their cases through the court system, if they are not satisfied with the Grievance Redress System.

8. Gaps Identified during AGP-I Implementation Period

The Mid-Term-Review conducted for AGP-I in December 2013, the annual ESMF performance review workshop, the stakeholder consultation held for ESMF preparation for AGP-II at different level, and the continuous supportive ESMF implementation monitoring conducted revealed that there are gaps in the following aspects:

The gaps identified during the existing AGP ESMF implementation are summarized below:

i. Low quality of the ESMP produced both at regional and Woreda level. The ESMP is prepared with shallow environmental and social assessment; and the impacts identified and the mitigation measures proposed are not specific to the specific nature of the subprojects and the specific biophysical and human environments;
ii. Limitation on the implementation of the mitigation measures identified and planned
iii. Limitation on the monitoring of the implementation of the mitigation measures;
iv. There was also limitation in documenting social safeguards issues addressed as required in the ESMF;
v. Limited implementation with regard to pest and pesticide product management. Implementation of irrigated agriculture increases the prevalence of pest which encourages farmers to use pesticide. During the implementation of AGP-I, most of the SSI subprojects were under construction and did not yet started production. However, there are micro-irrigation subprojects which have started production. It was expected that PMP has to be prepared and implemented; and
vi. Small Dam Safety guideline prepared for AGP-I application by the MoA is not yet used. The Small Dam Safety guideline is prepared to protect people, property and the environment from the harmful effects of mis-operation or failure of dams and reservoirs. So far during AGP-I implementation period, no small dam is constructed, and the guideline is not used. Most of the SSI implemented during AGP-I were small diversion schemes, and micro-irrigation structures like hand dug wells, excavated type small ponds, and tube wells. The impacts/effects from these subprojects on the environmental and property were managed by following conventional design approaches, and ESMP prepared for these subprojects. However, it is expected that in AGP-II, small dams will be constructed. In that case, the Small Dam Safety guideline will be followed, and the FAO 'Manual on Small Earth Dams, a guide to sitting, design and construction.

The main reasons for the above gaps and challenges are:

i) Low implementation capacity of experts of implementing agencies at different level especially at Woreda level; contractors and awareness problem by decision makers that lead limited support from them for the ESMF implementation.
ii) Most of the time, budget for mitigation measure in the ESMP is either not incorporated at all or not adequate.
iii) *Low attention for social safeguards issues and limited capacity* in implementing the social safeguards issues giving attention only for impacts on biophysical environment due to experience problem in doing so.
iv) Preparing *less feasible* and/or not implementable*/actionable ESMP/* due to limited capacity and experience in doing so.
v) Inadequate logistic especially transportation facility for monitoring the implementation of the ESMP both at Woreda and regional level.
vi) Turnover of trained and skilled personnel especially at Woreda level.

Action taken

To address the gaps described above, the following actions, among others, have been taken and need to be taken in the future:

i) Continuous supportive implementation support supervision were carried out to regional, Woreda and Kebele level; and feedbacks were given;
ii) Training materials were prepared (for example on ESMP preparation, impact significance evaluation, environmental and social monitoring) based on the gaps identified and training provided on these materials;
iii) Continuous capacity building trainings were provided on ESMF principles, process and procedures; environmental and social screening of subprojects; ESMP preparation; ESIA; pest and pesticide product management including IPM; and others;
iv) Annual ESMF implementation performance review workshops were conducted regularly to identify gaps and challenges faced during ESMF implementation, draw lesson and forward action points with clear responsibilities;
v) TORs have been developed to carry out ESIA for water resource development, rural road construction and market center development subproject taking into account the gaps identified as indicated above including addressing social safeguard issues.

Outcomes as a result of the above interventions/actions

The capacity building training provided on ESMF at different level, though it has some limitations, has brought knowledge, skill and attitudinal change and enabled implementing agencies and Kebele development committees implement the ESMF better. Some of the outcomes are described below.

i) The need for considering environmental and social issues in any AGP subprojects improved;
ii) At Kebele and Woreda level, illegibility checking and screening formats well prepared;
iii) Awareness of implementing agencies in preparing ESMP and implementing it improved;
iv) Quality ESMP reports is somewhat improved;
v) ESMP implementation enhanced; and
vi) Attention to Social issue increased;

The following recommendations are suggested for AGP-II

- Continuous technical support on the implementation of the ESMF at all level;
- Continuous capacity building training based on gaps identified during the technical support;
- More awareness creation works should be done on the decision makers at all level especially at the regional and Woreda level so that they support the implementation of the ESMF;
- To address the quality of ESIA report, environmental clause should be included contractual agreement for construction of feeder roads, small scale irrigation etc;
- To improve the implementation of mitigation measures identified and planned in the ESMP, AGP-II implementing agencies shall transfer the mitigation measures to be implemented by the contractor through contract agreement. Environmental clauses should be included in the contract agreement between the contractor and the IA/client and pay when the mitigation measures are implemented as per the agreement;
- Coordination of regional sub-project implementers in implementing safeguards is required to avoid piece meal approach. For example, integration of bureau/office of water resource/irrigation development agency with bureau of agriculture for the implementation of watershed based natural resources management activities to ensure effective implementation of mitigation measures and sub-project sustainability;
- Since some of the mitigation measures like soil and water conservation activities are implemented by the community/projects beneficiaries, communities should be communicated and participated early during the planning phase and before construction started. This help to implement mitigation measures timely.
- Technical solution should be given during designing subprojects,, particularly for SSI to avoid siltation, conflict between the upstream and downstream community;
- To manage the impact of pesticide on the ecosystem and human health, training shall be provided to Woreda experts and Development Agents on IPM concepts, knowledge, skill, and pesticide product management; training of farmers on IPM and pesticide product management; technical support to farmers from DAs, and office/bureau of agriculture. PMP shall also be prepared for each SSI and micro-irrigation subprojects. Currently, the FAO, Ethiopian country office has been working on capacity building on IPM for regional, Woreda, DA and farmers in AGP intervention Woredas. Pilot farmers field schools have been established by FAO in 14 AGP-I Woredas to promote the IPM approaches to the farmers. These initiatives have to be scaled up to the remaining AGP Woredas. Institutions working on crop protection and safe management of pesticide products, like bureaus/offices of agriculture and regional plant health clinics shall be strengthened in capacity both institutional and human capacity;
- It is expected that small dams will be financed by AGP during AGP-II implementation period. Hence, the Small Dam Safety guideline should be used to protect the safety of the environment and property of the community. The FAO '*Manual on Small Earth Dams, a guide to sitting, design and construction*' shall also be used for this purpose; and
- To ensure the successful implementation of the ESMF, implementation agencies and regulatory bodies shall have systemic monitoring system.

9. Capacity Building, Training and Technical Assistance

Effective implementation of ESMF requires technical capacity in the human resource base of implementing institutions and logistics. Implementers need to understand inherent social and environmental issues and values and be able to clearly identify their indicators.

9.1. Institutional Capacity Assessment

As indicated in the institutional arrangement part of section 4 of this ESMF, all the institutions at national, regional, Woreda and local (Kebele) level are responsible for the implementation of the ESMF. However, lessons learnt from the implementation of ESMF so far indicated that there are significant shortcomings in the abilities of local, Woreda and regional level AGP-II implementers to effectively implementing ESMF. Ministry of Agriculture, regional and Woreda EPLAUA have an overall key responsibility of ensuring that the project complies with Ethiopian environmental and social laws, and that the project adheres to this ESMF.

All implementing agencies at Woreda level except Woreda EPLAUA and most of regional level implementing agencies do not have staff directly trained and dedicated for environmental management purposes within these institutions. In many institutions, staffs have been retained for core activities. As a result, the environmental and social issue is handled by staff members not adequately familiar with it. In some cases, environment personnel are present but level of training and technical capacity on environmental principles and tools of management is not sufficient.

During the AGP-I, a number of training and awareness creation works were done at different level on ESMF and other safeguard instruments. In most cases, there is high staff turnover that were trained on environmental and social management. For the successful implementation of the ESMF during AGP-II implementation period, sufficient understanding of the mechanisms for implementing the ESMF will need to be provided to the various stakeholders at different level (especially at Woreda and Kebele level) implementing AGP-II subprojects.

9.2. Training

Awareness creation (A), training (T) and sensitization (S) will be required at different levels of implementation. These levels are federal implementing agencies experts, regional decision-making bodies, regional TC members, regional implementing agencies experts, regional AGP-II coordination units specialists, Woreda SC & TC, Woreda sector experts, Kebele development agents and grassroots stakeholders. The training, awareness creation and sensitization will be customized according to the levels of each of these groups to ensure adequacy in implementation of the ESMF.

Focus of the training

- National environmental and social legal, policy and administrative requirements;
- The World Bank environmental and social safeguard policies and how to comply them;
- ESMF process, procedures, and institutional arrangement to implement the ESMF,
- Environmental and social screening of subprojects and ESMP preparation;
- Environmental and social impact assessment methodologies;
- Reporting, monitoring and follow-up of ESMF
- Pest Management Plan including IPM concept, principle, approaches and applications;
- RPF and RAP/ preparation, implementation and monitoring.

Proposed approaches to training and Capacity building

To reduce cost and duplication of effort, trainers will be trained to train others. The federal AGP-II coordination unit will organize a TOT to regional level participants. Regional participants of the TOT will cascade the training to zone and Woreda experts including Woreda SC and TC; and Woreda and zone trainees provide the training to Development Agents (DAs). The DAs provide the ESMF and other related trainings, awareness creation and sensitization to Kebele Development Committees (KDCs). Independent consultants also participate in providing specific skill training like environmental and social impact assessment processes and methodologies for ESIA. Resources persons from FAO Ethiopia country offices, MoA, and others can be used in providing PMP and IPM trainings. Training on PCR assessment and management will be provided by resources persons from Authority for Research and Conservation of Cultural Heritages (ARCCH).

Table 9.1: Type of training and target groups for the effective implementation of ESMF

Topics	*MOA implementing Directorate, , Federal AGP-CU*	*AGP-RSC & TC, Regional AGP-CU Regional EPLAUA*	*Woreda and Zone IAs experts, WSC and TC, EPLAUA*	*Kebele Development Agents, Private Sectors, NGOs, CSOs*	*Community (KDCs)*
Awareness creation on ESMF process, procedures, institutional arrangements, environmental and social screening and review; legal and policies requirement both the national and World Bank requirements; environmental and social screening	Sensitization (S) workshop	S	S	S	Awareness (A) creation
TOT on Environmental and Social Assessment (ESA); ESMP, PMP preparation, RPF and RAP/ preparation, implementation, monitoring and reporting	Training (T)	T	T	T	S
TOT on RPF and RAP/ preparation, implementation, monitoring and reporting; community participation and consultation methods	A	T	T	S	S
Training on Environmental and social impact assessment processes and methodologies for ESIA		T			

9.3. Technical Assistance

For effective implementation of the ESMF, technical assistance is required at region, Woreda and local (Kebele) level. To ensure that local communities, DAs, Woreda and region government authorities and experts carry out their responsibilities as set out in section 4 of this ESMF to implement the ESMF at all level, a general technical assistance will be given from federal and regional AGP Environmental and Social Safeguard Specialists, Woreda and regional EPLAUA. Regional AGP-II IAs provides technical assistance to Woreda line offices. Similarly Woreda AGP-II IAs, SC and TC provide technical assistance to local level AGP-II implementation. This

assistance include assessment of training effectiveness; monitoring of the implementation and effectiveness of the mitigation measures identified and planned in the ESMP, RAP and IPMP; assessment of using the ESMF checklist; monitoring and supervision of the ESMF implementation. This will be done in quarterly bases and when it is required.

Besides the general technical assistance, a specific technical assistance will be given for local communities & DAs, Woreda and region government authorities and experts if specific technical knowledge is required when preparing, studying, designing and approving more challenging subprojects; preparing ESMP, PMP, and RAP/; and other assistance as required.

The budget for specific technical assistance is part of the subproject whereas the budget for general technical assistance is planned and included in the ESMF implementation budget in table 10.1.

10. ESMF Implementation Budget

The ESMF implementation budget for the training & workshops, general technical assistance, and environmental and social review is estimated and presented in table 10.1 below. The budget for the specific technical assistance in the implementation of the ESMF is part of the subproject cost and is not included here.

Table 10.1: Estimated Budget for ESMF Implementation (Capacity Building and General Technical Assistance)

S. No	Activities	Target Groups	# of days/ (frequency)	Budget in ETB ('000)					Total budget
				Year 1	Year 2	Year 3	Year 4	Year 5	
I	**Trainings**								
	Topics								
1	Awareness creation on ESMF process, procedures, institutional arrangements, environmental and social screening and review; legal and policies requirement both the national and World Bank requirements; environmental and social screening	Federal and regional AGP-II IAs and AGP-CUs staffs	1(1)	98.00		107.8			**205.8**
		Zone and Woreda AGP-II IAs including TC and SCs	1(1)	1,507.2		1,582.56			**3,089.76**
		DAs	1(1)	3,284.25		3,448.62			**6,732.87**
		KDCs	1(1)	-		-			
2	TOT on Environmental and Social Assessment (ESA); ESMP, PMP preparation, RPF and RAP/ preparation, implementation, monitoring and reporting	Federal and regional AGP-II IAs and AGP-CUs staffs	4(1)	171.50	180.00	189.01			**540.51**
		Zone and Woreda AGP-II IAs including TC and SCs	4(1)	2,260.8	2,373.84	2,492.53			**7,127.17**
		DAs	2(1)	4,379.00	4,597.95	4,827.85			**13,804.80**
		KDCs	1(1)	-	-	-			
3	Training on Environmental and social impact assessment processes and methodologies for ESIA	Regional experts of AGP-II IAs mainly from bureau of road, water/irrigation/EPLAUA	1(1)	530.89	-	-	-	-	**530.89**
	Subtotal I			**12,231.64**	**7,151.79**	**12,648.37**	**-**	**-**	**32,031.80**
II	**Annual environmental and social review workshop**	At federal level (regional AGP-CU safeguard specialist and IAs experts and EPLAUA experts are the target group)	1(1)	240.00	264.00	290.40	319.44	351.38	**1,465.22**

S. No	Activities	Target Groups	# of days/ (frequency)	Budget in ETB ('000)					Total budget
				Year 1	Year 2	Year 3	Year 4	Year 5	
		At regional level (Woreda IAs and EPLAUA experts are the target groups)	1(1)	1,566.82	1,645.16	1,727.42	1,817.25	1,908.12	**8,664.77**
	Subtotal II			**1,806.82**	**1,909.16**	**2,017.82**	**2,136.69**	**2,259.50**	***10,129.99***
III	**General Technical Assistances**	Federal to region, Woreda & Kebele;	15(4)	58.00	63.8	70.18	77.20	84.92	**354.10**
		Region to Woreda and Kebele;	15(4)	98.32	108.15	118.97	130.86	143.95	**600.25**
		Zone to Woreda and Kebele;	7(4)	292.32	321.55	353.71	389.08	427.99	**1,784.65**
		Woreda to Kebele	7(12)	842.12	884.23	928.44	974.86	1,023.6	**4,653.25**
	Subtotal III			**1,290.76**	**1,377.73**	**1,471.3**	**1,572**	**1,680.46**	**7,392.25**
IV	**Annual Environmental and Social Review (by independent third party)**		1 document	500.00	550.00	605.00	665.50	665.50	**2,986.00**
	Total (I+II+II+IV)			**15,829.12**	**10,988.68**	**16,742.49**	**4,374.19**	**4,605.46**	**52,540.04**

11. References

1. Authority for Research and Conservation of Cultural Heritages (ARCCH), Cultural Heritage Research Directorate (March 2012). Archeological and Paleontological research Sites in Ethiopia, Addis Ababa, Ethiopia.

2. DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

3. Environmental policy of Ethiopia (1997).

4. Ethiopian EIA guideline (May 2000).

5. Guideline on community level participatory planning. MOA – AGP

6. MoA. AGP-I, Environmental and Social Management Framework

7. MoA. Agricultural Growth Project – Phase I (December 2009). Program Implementation Manual.

8. PCDP-III (September 2013). Environmental and Social Management Framework.

9. Regional BoFED Annual statistical reports

10. SLMP–II (September 2013). Environmental and Social Management Framework

11. USAID (January 2007). Environmental guideline for small scale activities in Africa, environmentally sound design for planning and implementing development activities.

12. Various relevant Proclamations, policies and guidelines in Ethiopia

13. World Bank. Environmental assessment sourcebook, Volume I and II

14. World Bank (February 2008). Environmental and Social Management Framework for World Bank Projects with Multiple Small-Scale Subprojects, A Toolkit, Africa Region, The World bank.

15. World Bank (1999) Environmental Management Plans, Environmental Assessment Sourcebook Update**,** November 25. Environment Department, World Bank, Washington D.C.

Technical Annexes

Annex 1: Subproject Eligibility Screening Checklist for KDC members at Kebele Level

Subproject Name: _____

Region; _____; Zone: _____; Woreda: _____; Kebele: _____

.**Will the sub-project:**	**Yes**	**No**
Is in, or adjacent to, an internationally disputed area		
May involve the physical relocation of residents		
Incorporates a Dam of more than 15 meters in height		
Is located in a priority Area/ critical natural habitats or involves land-use change such as drainage of wetland and cultivation		
Adversely affects vulnerable groups		
Affect important physical and cultural resources (historical, religious, archaeological, sites and monuments)		

Recommendations:

Sub-project is not eligible and rejected: ☐

Sub-project is eligible and approved: ☐

Name and signature of KDC members who did the eligibility check:

1.
2.
3.
4.
5.
6.

Annex 2: Subproject Screening Checklist for Woreda AGP-II Implementing Agencies

1. For sub-projects needing special attention

Feature of Concern	Yes	No
Subproject likely to use pesticides or other agro-chemicals		
Subproject involves land acquisition, or loss of assets, or access to assets on the land		

Recommendations

Sub-project needs special attention: ☐

Sub-project does not need special attention: ☐

2. For subprojects of environmental and social concern

Will the sub-project:	Yes	No
Located within National and or regional Park or other designated wildlife area or buffer zone		
Located in forest priority areas and cause destruction of habitats		
Involves draining of or disturbance to a wetland and other ecologically sensitive areas		
Located close to cultural heritage, historical and religious sites		
Subproject that incorporates a dam construction		
Subproject that involves use of hazardous laboratory chemicals		
Subproject involves abstraction of significant volume of water from international waterways		

3. Checklist for environmental and social impact rating

Subproject types	Rate of Impacts				
	None	Low	Medium	High	Unknown
Rural Feeder Road Construction Subprojects					
Soil erosion and initiation of flooding, gully erosion, farm land degradation					
Loss of biodiversity through cut and fill activities					
Destruction of natural habitats					
Sedimentation to water sources and reservoirs					
Disturbance to and loss of ecologically sensitive habitats					
Damage to cultural, religious and historical sites					
Cause opening of quarry/borrow sites and result in water pollution and vector born diseases					
Cause land acquisition and property losses					
Others (specify)					
Small Scale & micro-irrigation subprojects					
Significant deforestation					
competing claims for water and social tension between the upstream and downstream community					
Disturbance to wildlife habitats or populations					
Disrupt ecologically sensitive areas					
Land clearing and biodiversity loss					
Disturbance to cultural or religious sites					
Cause land acquisition and property losses					
Water logging and increased soil salinity due to inefficient water application, saline irrigation water, and soil salinity					
Risk of vector born diseases due to standing water at quarry site,					

Subproject types	Rate of Impacts				
	None	Low	Medium	High	Unknown
water storage structures, and canals					
Soil acidity due to increased and improper application of inorganic fertilizer					
Increased used of pesticide and other agrochemicals					
Deterioration of river water quality below irrigation project and contamination of local ground water (higher salinity, nutrients, agrochemicals) affecting fisheries and downstream users					
Poor land use practices in catchment areas above the reservoir resulting in increased siltation and loss of storage capacity					
Others (specify)					
Market center development subprojects					
Soil erosion and initiation of flooding					
Sedimentation to water sources and reservoirs					
Cause flooding and erosion					
Disturbance to and loss of ecologically sensitive habitats					
Damage to cultural, religious and historical sites					
Cause opening of quarry/borrow sites and result in water pollution and vector born diseases					
Cause land acquisition and property losses					
Contamination of soil and water from sewage/toilet and solid waste					
Improper site selection, design and construction of toilet which later on cause for health problem					
Generation of solid and liquid waste from the market center that contaminate the environment and cause the health problem					
Absence or poor management of appropriate waste (both solid and liquid) management facilities					
Others (specify)					
Watershed management subprojects including Gully Rehabilitation					
Restriction of human and livestock mobility					
Restriction of access to communal lands					
Risk of introduction of invasive exotic species					
Compromise to local biodiversity					
Cause land acquisition and property losses					
Flooding and erosion due to breach of the physical structures					
Others (specify)					
Pest management					
Destruction of crop pollinators leading to poor crop yield					
Elimination of natural enemies of crop pests and consequent loss of natural pest control that keeps the populations of crop pest low					
Development of pest resistance to pesticides, encouraging further increases in the use of chemical pesticides					
Contamination of the soil and water bodies which results toxicity to fishes and birds					
Pesticide poisoning of farmers and deleterious effects on human health:					
• During storage					
• During use					
• Due to obsolete pesticide and management of pesticide containers					
Unacceptable levels pesticide residues in harvested produce and in					

Subproject types	Rate of Impacts				
	None	Low	Medium	High	Unknown
the food chain					
Loss of biodiversity in the environment, particularly of the aquatic non-target species					
Other (specify):					
Laboratory chemicals/Reagents (for soil testing laboratories, and animal health clinics/posts and laboratories)					
Water and soil contamination due to poor management of laboratory chemicals and contaminated wastes (solid and liquid wastes)					
Health hazards to the laboratory community during handling, storage, use of chemicals, and disposal					
Other (specify):					
Health risk to the surrounding community due unsafe disposal of the chemicals					
Lime production subprojects					
Produce areas of bare soil which cause erosion, siltation,					
Health problem from quarry sites					
Health problem due to blasting of quarry site					
Wash-off from the limestone dumps will lead to the adjoining surface water body which increase water alkalinity, and increase in suspended solids					
Spread of vector-borne diseases when stagnant water accumulates in active or abandoned quarries or borrow pits and breeds insect vectors					
Contamination of soil and water from sewage and solid waste, and health impact from the sanitary problem at the quarry site					
Health problem during production (high noise, dust, safety problem for the problem)					
Disturbance to and loss of ecologically sensitive habitats					
Damage to cultural, religious and historical sites					
Others (specify)					
Livestock Bread Improvement					
Introduction of exotic breed which result loss of livestock biodiversity					
Introduction of new pathology					
Others (specify)					

Note on Impact identification and classification

When considering the location of a subproject, rate the sensitivity of the proposed site 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 social planning may be required to adequately avoid, mitigate or manage potential effects. The following table should be used as a reference.

Issues	Site Sensitivity		
	Low	**Medium**	**High**
Natural habitats	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present
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/ hurricanes	Mountainous terrain; steep slopes; unstable soils; high erosion potential; volcanic, seismic or flood risks
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	Low population density; dispersed population; legal tenure is well-defined; well-defined water rights	Medium population density; mixed ownership and land tenure; well-defined water rights	High population density; major towns and villages; low-income families and/or illegal ownership of land; communal properties; unclear water rights
Indigenous peoples	No indigenous population	Dispersed and mixed indigenous populations; highly acculturated indigenous populations	Indigenous territories, reserves and/or lands; vulnerable indigenous populations

Recommendation

☐ Approved without condition ☐ Full ESIA required

☐ Special plans should be prepared independently – mark [√] in the box below

☐ ESMP ☐ RAP ☐ PMP ☐ Others (specify):

If the recommendation is to prepare ESMP or RAP or PMP or others, environmental and social assessment (initial environmental and social examination) is required by the implementing agency/proponent, and reviewed by the regulatory body (EPLAUA).

☐ Rejected

Reason for rejection

[type here]

Completed by: [Name – type here]
Position:[type here]
Date: [type here]

Reviewed by: [Name – type here]
Position: [type here]
Date: [type here]

Annex 3: Environmental and Social Field Appraisal Form

Part: Identification

1. Project Name:
2. Project Location:
3. Reason for Field Appraisal:
4. Date(s) of Field Appraisal:
5. Field Appraisal Officer and Address:
6. DA Representative and Address:
7. KDC Representative and Address:

Part 2: Description of the Project

8. Project detail: Provide details that are not adequately presented in subproject application.

Part 3: Environmental and Social Issues

9. Will the project:

Need to acquire land?	Yes	No
Affect an individual or the community's access to land or available resources?		
Displace or result in the involuntary resettlement of an individual or family?		

If "Yes", tick one of the following boxes:

- ☐ The RAP/ included in the subproject application is adequate. No further action required.
- ☐ The RAP/ included in the subproject application must be improved before the application can be considered further.
- ☐ A RAP/ must be prepared and approved before the application can be considered further.

10. Will the project:

Encroach onto an important natural habitat, forest?	Yes	No
Negatively affect ecologically sensitive ecosystems?		

If "Yes", tick one of the following boxes:

- ☐ The Environmental Management Plan (EMP) included in the subproject application is adequate. No further action required.
- ☐ The ESMP included in the subproject application must be improved before the application can be considered further.
- ☐ An ESMP must be prepared and approved before the application can be considered further.

11. Are there vulnerable groups living in the subproject area that could benefit from, or be adversely affected by, the subproject?

Yes	No

If 'Yes", tick one of the following boxes:

- ☐ A plan for the vulnerable group included in the subproject application is adequate. No further action required.
- ☐ A plan for the vulnerable group included in the subproject application must be improved before the application can be considered further.
- ☐ A plan for the vulnerable group must be prepared and approved before the application can be considered further.

12. Will this project involve or introduce pesticides?

Yes	No

If "Yes", tick one of the following boxes:

- ☐ The Pest Management Plan (PMP) included in the subproject application is adequate. No further action is required.
- ☐ The PMP included in the subproject application must be improved before the application can be considered further.
- ☐ A PMP must be prepared and approved before the application can be considered further.

13. Will the project involve?

Provision of laboratory chemicals/reagents	Yes	No
Construction and/or rehabilitation of latrines, septic or sewage systems?		
Production of waste (e.g. slaughterhouse waste, medical waste, etc.)?		
Application of fertilizer?		

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 measures described in the application for managing the potential adverse environmental effects of these activities are not adequate. The application need to be prepared and improved before the application is considered further.
- ☐ The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An Environmental Management Plan must be prepared and approved before the application is considered further.

14. Will the project involve or result in:

Diversion or use of surface waters?	Yes	No
New or rebuilt irrigation or drainage systems?		
Construction of water harvesting structures?		
Construction of shallow wells/hand dug well?		
Construction of rural road, foot bridge?		
Construction of market center?		
Production of lime?		
Others (specify)		

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 measures described in the application for managing the potential adverse environmental effects of these activities are not adequate. The application need to be prepared and improved before the application is considered further.
- ☐ The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An Environmental Management Plan must be prepared and approved before the application is considered further.

15. Will the project involve

Construction of biophysical soil and water conservation measures?	Yes	No
Construction of gully rehabilitation structures?		
Constructions of ground water recharge structures?		
Introduction of new plant species?		

Removal of native plant/tree species?		

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 measures described in the application for managing the potential adverse environmental effects of these activities are not adequate. The application need to be prepared and improved before the application is considered further.
- ☐ The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An Environmental Management Plan must be prepared and approved before the application is considered further.

16. Will this project require the construction of a small dam, pond, water tank, or weir?

Yes	No

If "Yes", tick one of the following boxes:

- ☐ The application demonstrates that the structure(s) will be designed by qualified engineers, and will be built by qualified and adequately supervised contractors. No further actions are required.
- ☐ The application does not demonstrate that the structure(s) will be designed by qualified engineers, and will be built by qualified and adequately supervised contractors. The application needs to be amended before it can be considered further.

17. Will this project rely on water supplied from an existing dam or weir?

Yes	No

If "Yes", tick one of the following boxes:

- ☐ The application demonstrates that a dam safety report has been prepared, the dam is safe, and no remedial work is required. No further action is required.
- ☐ The application does not demonstrate that a dam safety report has been prepared, the dam is safe, and no remedial work is required. A dam safety report must be prepared and approved before the application is considered further.

18. Will the project involve

Construction of biophysical soil and water conservation measures?	Yes	No
Construction of gully rehabilitation structures?		
Constructions of ground water recharge structures?		
Introduction of new plant species		
Removal of native plant/tree species		

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 measures described in the application for managing the potential adverse environmental effects of these activities are not adequate. The application need to be prepared and improved before the application is considered further.
- ☐ The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An Environmental Management Plan must be prepared and approved before the application is considered further.

19. Will the project involve

Animal fattening?	Yes	No
Poultry production?		
Dairy farm?		
Dairy processing		
Apiculture?		
Others (specify)		

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 measures described in the application for managing the potential adverse environmental effects of these activities are not adequate. The application need to be prepared and improved before the application is considered further.
- ☐ The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An Environmental Management Plan must be prepared and approved before the application is considered further.

20. 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 Environmental and Social Management Plan needs to be prepared and approved before the application is considered further.

Part 4: Field Appraisal Decision

☐ **The subproject 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 addresses

Environmental and/or social issues as required by the Project's ESMF.

☐ **Further subproject preparation work is required before the application can be considered further.**

The field appraisal has identified environmental and/or social issues that have not been adequately addressed. The following work needs to be undertaken before further consideration of the application:……
……..

All required documentation such as an amended application, ESMP, RAP/, or PMP will be added to the subproject file before the subproject is considered further.

Name of field appraisal safeguard specialist (print): ……

Signature: ..... Date: .....

Annex 4: ESMF Quarter and Annual Reporting Form

Quarter and Annual Report Form to Be Completed by Woreda EPLAUA, Regional AGP-CU, and federal AGP-CU

1. General

Woreda/Region/Federal: [Type here]
Reporting Quarter/Year: [type here]
Date of the report: [Type here]

2. Report summary (narrative):

Here the narrative of the ESMF implementation during the reporting period is summarized. The figures in the report table are discussed. The ESMF implementation monitoring activities carried out including aspects monitored, issues identified, proposed solution and follow up activities are summarized here.

3. In the table below, fill and tick for a number of subprojects/activities (screened, reviewed and approved) described below against the column question

Type of Subprojects/activities	Number of subprojects in this category	subproject location (Kebele, Woreda, region)	Approved this quarter/year	Application included ESMF checklist (Annex 2)	Subprojects for which						Remarks
					Desk review/appraisal undertaken	Field appraisal undertaken	EMP prepared	RAP/ prepared	PMP prepared	Full ESIA Carried out	
I. Agricultural Production and Productivity enhancement											
Strengthening soil testing laboratories with chemicals/reagents,											
Production of lime											
Strengthening animal health clinics and posts with laboratory chemicals/reagents, and equipments,											
Provision of exotic breed,											
Construction of artificial insemination center											
Animal fattening											
Milk production (dairy farm)											
Milk processing (dairy processing)											
Poultry production											
Aquaculture											
Community based seed production,											
Establishment of community nurseries											
Conducting demonstration on on-farm and FTC											
Others [specify]											
II. Support to Innovation and Adaptive Agricultural Research											
Agricultural Technology demonstration (mention)											
Others (specify)											
III. Small-Scale Rural Infrastructure											

Type of Subprojects/activities	Number of subprojects in this category	subproject location (Kebele, Woreda, region)	Approved this quarter/year	Application included ESMF checklist (Annex 2)	Subprojects for which						Remarks
					Desk review/appraisal undertaken	Field appraisal undertaken	EMP prepared	RAP/ prepared	PMP prepared	Full ESIA Carried out	
Development and Management											
SSI and Micro-irrigation subproject											
Rehabilitation and/or improvement of existing traditional and modern SSI & micro irrigation schemes											
Rehabilitation and/or improvement of existing modern SSI & micro irrigation schemes											
Establishment of new SSI schemes											
Construction of ponds											
Construction of small dam											
Construction of shallow wells											
Other (specify)											
Soil and water conservation											
Construction of different bio-physical soil and water conservation measures											
Construction of gully rehabilitation structures											
Area closure											
Plantation of multipurpose trees											
Construction of groundwater recharge structure											
Others (specify)											
Feeder road and foot bridge development and management											
Construction of small-scale rural feeder roads, and roadside drainage structures											
Rehabilitation, and/or maintenance of small-scale rural feeder roads, roadside drainage											
Construction footbridges											
Others (specify)											

Type of Subprojects/activities	Number of subprojects in this category	subproject location (Kebele, Woreda, region)	Approved this quarter/year	Application included ESMF checklist (Annex 2)	Subprojects for which						Remarks
					Desk review/appraisal undertaken	Field appraisal undertaken	EMP prepared	RAP/ prepared	PMP prepared	Full ESIA Carried out	
IV. Agricultural Marketing and Agribusiness development											
Construction of market centers											
Construction of warehouse, storage and grading facilities											
Construction of access road to the market center											
Others (specify)											

4. Have communities been involved in the identification of subprojects? Tick [x]

[ ] Yes [ ] No
If yes, describe:
[type here]
Please explain any participatory issues that have impacted the ability of the communities to identify subprojects
[type here]

5. Were there any unforeseen environmental or social problems associated with any subprojects approved and implemented this year? If so, please identify the subprojects and summarize the problem(s) and what was or will be done to solve the problem(s). Use a summary table like the one below.

Subproject	***Key gaps or areas of non-compliance(problems)***	***Key action taken***	***Follow up activities recommended (action to be taken)***

6. Is the project [type the name of the project here] positively contributing to the environment in this Woreda/region?

☐ Yes
☐ No
☐ Too early to say

Please explain:

[type here]

7. Did the subproject improve the welfare of women and youth in this Woreda/Region?

☐ Yes
☐ No

[ ] Too early to say

Please explain:

[type here]

8. Has there been any analysis of cumulative environmental and social impacts of AGP projects in this Woreda/Region? Tick [x]

[ ] Yes [ ] No

If yes, describe:

[type here]

9. Have there been any environmental and/or social analyses undertaken in this Woreda/Region in connection to AGP projects? Tick [x]

[ ] Yes [ ] No

If yes, describe:

[type here]

10. ***Training***

Please the types of training given at your Woreda/Region.

[type here]

Please list the types of training needed to ensure the effectiveness of the ESMF in your Woreda.

[type here]

11. *Completed* by: [Name]
    Position: [type here – positions of all contributors]
    Date: [type here]

Annex 5: Guideline for Pest Management Plan

Elements of a Pest Management Plan

1. **Pest Management Approach**

i. Current and anticipated pest problems relevant to the project

Common pest problems and estimated economic impact

ii. Current and proposed pest management practices

Describe current and proposed practices, including non-chemical preventative techniques, biological and chemical control. Is optimum use being made of agro-ecosystem management techniques to reduce pest pressure and of available non-chemical methods to control pests? Do farmers and extension staffs get sufficient information about IPM approaches that reduce reliance on chemical control?

iii. Relevant IPM experience within the project area, Woreda, region or country

Describe existing IPM practices, projects/programs, research

iv. Assessment of proposed or current pest management approach and recommendations for adjustment where necessary

Where the current or proposed practices are not consistent with the principles of an IPM approach, the discrepancies should be discussed and a strategy should be proposed to bring pest management activities into line with IPM.

2. **Pesticide Management**

i. Describe present, proposed and/or envisaged pesticide use and assess whether such use is in line with IPM principles.

Provide purpose of pesticide use, type of products used, frequency of applications, and application methods. Is pesticide use part of an IPM approach and is it justified? Justification of pesticide use under the project should (a) explain the IPM approach and the reason why pesticide use is considered, (b) provide an economic assessment demonstrating that the proposed pesticide use would increase farmers' net profits, or for public health projects, provide evidence that the proposed pesticide use is justified from the best available (probably WHO supported evidence) public health evidence.

ii. Indication of type and quantity of pesticides envisaged to be financed by the project (in volume and ETB value) and/or assessment of increase in pesticide use resulting from the project.

iii. Circumstances of pesticide use and the capability and competence of end-users to handle products within acceptable risk margins (e.g. user access to, and use of, protective gears and appropriate application equipment; users' product knowledge and understanding of hazards and risks; appropriateness of on-farm storage facilities for pesticide).

iv. Assessment of environmental, occupational and public health risks associated with the transport, storage, handling and use of the proposed products under local circumstances, and the disposal of empty containers.

v. Pre-requisites and/or measures required to reduce specific risks associated with envisaged pesticide use under the project *(e.g.: protective gear, training, upgrading of storage facilities, etc.).*

vi. Selection of pesticides authorized for use, taking into consideration: (a) criteria set at national (if there is any) or international, (b) the hazards and risks and; (c) the availability of newer or less hazardous products and techniques (e.g. bio-pesticides, traps).

3. **Monitoring and Supervision**

i. Description of activities that require local monitoring during implementation,
ii. Description of activities that require monitoring during supervision visits (e.g. regarding effectiveness of measures to mitigate risks; progress in strengthening regulatory framework and institutional capacity; identification of new issues or risks arising during implementation)
iii. Monitoring and supervision plan, implementation responsibilities, required expertise and budget

Annex 6. Guideline for ESMP Preparation

The ESMP should be formulated in such a way that it is easy to use. References within the plan should be clearly and readily identifiable. Also, the main text of the ESMP needs to be kept as clear and concise as possible, with detailed information relegated to annexes. The ESMP should identify linkages to other relevant plans relating to the project, such as plans dealing with resettlement or indigenous peoples issues. The following aspects should typically be addressed within ESMPs.

Contents of Environmental and Social Management Plan

Description of the subproject

The subproject description should be based on the project feasibility study. Not all the detailed subproject information needs to be included as much of it is unnecessary for the environmental review. The subproject description should present a condensed description of those aspects of the subproject likely to cause environmental effects. The subproject should be described in terms of its basic activities-series of activities to carry out laboratory analysis, location, layout, and schedule (in terms of the project life cycle). This subproject description section of the report should furnish sufficient details to give a brief but clear picture of the following:

- Type and nature of the subproject.
- Need for the subproject.
- Location (use maps showing general location, specific location, subproject boundary and subproject site layout).
- Size or magnitude of operation, including any associated activities required by or for the subproject.
- Description of the subproject, including drawings showing subproject layout, activities of subproject, etc.

Description of the environment

A clear description of the organization delineation of the study area is important to define the area within which impacts must be considered. Once the study area is well defined, studies to gather the baseline conditions for valued environmental components must be developed. These components and values include, to the extent applicable (but are not necessarily limited to):

- **Physical components:** topography, soils, climate, surface water, groundwater, rangeland, and etc… which are relevant to the subproject nature and type.
- **Ecological components:** fisheries, aquatic biology, wildlife, forests, rare or endangered species, wilderness or protected areas.
- **Human and economic development:** population and communities (numbers, locations, composition, employment, etc.), industries, infrastructural facilities (including water supply, sewerage, etc.), institutions, transportation (roads, harbors, airports, navigation), land use mineral development, and tourism components.
- **Quality of life values:** socioeconomic values, public health, recreational components and development, aesthetic values, archaeological or historical treasures, and cultural values.

It is not necessary to gather information on all the components listed in such environmental component checklists. The baseline studies should concentrate on identifying those environmental components that may be significantly impacted by the project.

In addition to the basic physical features and infrastructure of the study area, it is valuable to have maps identifying vegetation types/communities, animal habitat, and major population centers.

Description of the adverse impacts:

The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized. Cross-referencing to the environmental and social assessment (ESA) report or other documentation is recommended, so that additional detail can readily be referenced.

Description of mitigation measures:

The ESMP identifies feasible and cost effective measures to reduce potentially significant adverse environmental and social impacts to acceptable levels. Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, designs, equipment descriptions, and operating procedures which elaborate on the technical aspects of implementing the various measures. Where the mitigation measures may result in secondary impacts, their significance should be evaluated.

Description of monitoring program

Environmental performance monitoring should be designed to ensure that mitigation measures are implemented, have the intended result, and that remedial measures are undertaken if mitigation measures are inadequate or the impacts have been underestimated within the ESA report. It should also assess compliance with national standards and World Bank requirements or guidelines.

The monitoring program should clearly indicate the linkages between impacts identified in the ESA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. Although not essential to have complete details of monitoring in the ESMP, it should describe the means by which final monitoring arrangements will be agreed. Responsibilities for mitigation and monitoring should be clearly defined. The ESMP should identify arrangements for coordination between the various factors responsible for mitigation.

Implementation schedule and reporting procedure

The timing, frequency, and duration of mitigation measures should be specified in an implementation schedule, showing links with the overall project implementation plans (PIP). Where implementation of mitigation measures is tied to the project legal agreements, these linkages should be outlined. For example, some mitigation measures may be made conditions for loan effectiveness or disbursement.

Procedures to provide information on the progress and results of mitigation and monitoring measures should also be clearly specified.

Cost estimates and sources of funds

These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs. Where practicable, decisions regarding appropriate mitigation measures should be justified by an economic evaluation of potential environmental impacts, aimed at:

- Measuring the cost-effectiveness of different mitigation options where a project is required to meet a set of environmental standards or achieve specific environmental objectives
- Determining the appropriate level of mitigation where there is scope for a trade-off between environmental quality and the costs (and benefits) of achieving it

- Internalizing the economic value of residual impacts or intended environmental improvements into the final economic appraisal of the project.

It is important to capture all costs—including administrative, design and consultancy.
The ESMP table should look as follows

Environmental and social Management Plan

A. Mitigation Plan

Subproject activities for each phases of the subproject	***Potential Environmental and Social Impacts***	***Proposed Mitigation Measure(s) (Incl. legislation & regulations)***	***Institutional Responsibilities (Incl. enforcement & coordination)***	***When to implement? (schedule of mitigation plan implementation)***	***Cost Estimates***	***Comments (e.g. secondary impacts)***
Pre-Construction Phase Activity 1. Activity 2. . .						
Construction Phase Activity 1. Activity 2. . .						
Operation and Maintenance Phase Activity 1. Activity 2. . .						

Environmental and Social Management Plan

B. Monitoring Plan

Proposed Mitigation Measure (for each impact and each activities)	***Monitoring objective***	***Parameters to be Monitored***	***Location***	***Measurements (Incl. methods & equipment)***	***Frequency of Measurement***	***Responsibilities (Incl. review and reporting)***	***Cost (equipment & individuals)***
Pre-Construction Phase Activity 1. Activity 2. . .							
Construction Phase Activity 1. Activity 2. . .							
Operation and Maintenance Phase Activity 1. Activity 2. . .							
Total Cost for all Phases							

Annex 7: Monitoring and Evaluation of the implementation of ESMF

For the effective implementation of the ESMF a regular and period follow up is required. The objective of this is to:

1. Alert project authorities (i.e. primarily) by providing timely information about the success or otherwise of the environmental management process outlined in this ESMF. This will ensure continuous improvement to AGP-II environmental and social management process (even beyond the project's life).
2. Make a final evaluation in order to determine whether the mitigation measures incorporated in the technical designs and the ESMP have been successful.

2. Monitoring of Environmental and Social Indicators

The goals of monitoring are to:

- measure the success rate of the project
- verify the accuracy of the environmental and social impact predictions
- determine the effectiveness of measures to mitigate adverse effects of projects on the environment.
- determine whether interventions have resulted in dealing with negative impacts
- determine whether further interventions are needed or monitoring is to be extended in some areas.

Monitoring indicators will be very much dependent on specific project contexts.

Two opportunities will be taken to build a simple system for the monitoring and evaluation of environmental and social impacts:

A. Initial proposals

The key issues to be considered in the AGP-II subprojects include monitoring of water quality, soil erosion, land degradation, vegetation removal, soil acidification and salinization, wetland drainage, occupational health & safety for those working in animal health clinic/post and soil testing laboratory, health problem, agricultural production, pest management, land acquisition, income generation and livestock health care and population influx.

Monitoring and surveillance of subprojects will take place on a *spot check* basis. The *spot checks* consist of controlling the establishment of mitigation measures. It is not recommended to collect large amounts of data, but rather to base monitoring on observations of project technicians and stakeholders to determine the trends in indicators.

B. Monitoring of participation process

The following are indicators for monitoring of the participation process involved in the project activities.

- Number and percentage of affected households consulted during the planning stage
- Levels of decision-making of affected people
- Level of understanding of project impacts and mitigation
- Effectiveness of local authorities to make decisions
- Frequency and quality of public meetings
- Degree of involvement of women and youth or disadvantaged groups in discussions
- Monitoring of implementation of mitigation plans lists the recommended indicators for monitoring the implementation of mitigation plans.

3. Evaluation of Results

The evaluation of results of environmental and social mitigation can be carried out by comparing baseline data collected in the planning phases with targets and post-project situations. A number

of indicators would be used in order to determine the status of affected people and their environment (land being used compared to before, how many irrigation subprojects than before, etc).

In order to assess whether these goals are met, the implementing agencies at Woreda and regional level will indicate the following in the ESMP. The Woreda and regional EPLAUA, and the regional safeguard specialist will review/check these issues based on the institutional arrangement indicated in this ESMF.

The regional and federal AGP safeguard specialist will give technical assistance for IAs in doing so. The following are some pertinent parameters and verifiable indicators/questions to be used to measure the ESMF process, mitigation plans and performance.

- Have the AGP-CU at federal and regional level in collaboration with the regional and Woreda EPLAUA trained a local social and environmental specialist, and IAs focal person in charge of AGP-II activities in considering the social and environmental issues?
- Have the ESMP's and final subproject designs been cleared by the EPLAUA at Woreda and regional level as indicated in the institutional arrangement indicated in this ESMF?
- At what rate are the IAs monitor ESMF implementations?
- How many RAPs/s have been fully executed before physical displacement of people?
- How many recorded grievance cases have been settled within one year?

4. Monitoring of ESMF implementation

In addition to the Project Reports and ESA studies required under the Ethiopian Environmental legislation, an Annual Audit on ESMF Implementation will be done and report prepared by the Woreda EPLAUA for those projects executed by the Woreda IAs and delivered to BOEPLAUA. Again the regional EPLAUA will conduct for those AGP-II subprojects executed by the regional IAs. The audits conducted both at regional and Woreda level should be sent to the federal AGP-CU. All implementing agencies should conduct their own regular internal ESMF implementation audit and submit to EPLAUA at their respective level. The regional and federal AGP-CU safeguard specialists facilitate and supervise the execution of the audit, and also provide technical support in doing so.

5. Monitoring Roles and Responsibilities

Implementing agencies at Woreda and regional level have the lead responsibility to monitor the implementation of the ESMP including the PMP and the RAP/ that they prepare. EPLAUA at Woreda and regional level have also the responsibility to verify the monitoring report prepared by the implementing agencies at their respective level. Woreda EPLAUA will be required to prepare periodic monitoring reports and submit it to EPLAUA, and EPLAUA will prepare periodic monitoring report and submit to regional AGP-CU to be compiled and submitted to federal AGP-CU.

Environment and Social safeguard specialists at Regional and federal AGP-CU will facilitate and provide technical supports for the monitoring activities to be done by the regional and Woreda IAs and EPLAUs. They also carry out their monitoring activity to track the progress of the implementation of the mitigation measures prepared Woreda and regional IAs. Development agents (DAs), KDCs and local community have also the responsibility to follow up the implementation of the ESMF at their locality. Donor representatives, independent consultants, Woreda TC, Zone TC and IAs have a role of giving support for the monitoring program.

6. Supervision

Supervising the implementation of ESMPs, which include ESMP, PMP and RAP/, will be the responsibility of EPLAUA at Woreda and regional level. Environment and Social safeguard specialists at Regional and federal AGP-CU will provide technical supports, and facilitate the process. Supervision of the ESMPs covers monitoring, evaluative review and reporting. Generally, it is designed to:

- determine whether the subproject is being carried out in conformity with environmental safeguards and legal agreements,
- identify problems as they arise during implementation and recommend means to resolve them,
- recommend changes in project concept/design, as appropriate, as the project evolves or circumstances change and
- Identify the key risks to project sustainability and recommend appropriate risk management strategies.

It is vital that an appropriate environmental and social supervision plan is developed with clear objectives to ensure the successful implementation of an ESMP.

Annex 8: Main Issues from Small Dam Safety Guideline

Small Dam Safety Guideline

1. Introduction

Benefits which will accrue from the promotion and achievement of adequate dam safety practices include environmental protection, public confidence, and the commercial benefits to the owner of constructing and maintaining in a safe and insurable condition, what is usually a significant investment.

The owner of a dam is responsible for:

- safely operating and maintaining the dam;
- giving appropriate warnings if the operation or failure of the dam could cause damage;
- compensating damage caused by the operation or failure of the dam.

The overarching dam safety objective is to protect people, property and the environment from the harmful effects of mis-operation or failure of dams and reservoirs. To ensure that dams and reservoirs are operated and that activities are conducted so as to achieve the highest standards of safety that can reasonably be achieved, measures have to be taken to achieve the following three fundamental safety objectives:

- to control the release of damaging discharges downstream of the small dam,
- to restrict the likelihood of events that might lead to a loss of control over the stored volume and the spillway and other discharges,
- to mitigate through onsite accident management and/or emergency planning the consequences of such events if they were to occur.

These fundamental safety objectives apply to dam and activities in all stages over the lifetime of a dam, including planning, design, manufacturing, construction, commissioning and operation, as well as decommissioning and closure.

2. Parties Involved

The main parties that are involved in dam are the owner or developer, the supervising body, the technical adviser/engineer, the contractor, and the public, who may be affected directly or indirectly by the dam.

The dam owner for small dams to be constructed by AGP-II is the Bureau of Water Resource. Small Dam owners are responsible for the safety and the liability of the dam and for financing its upkeep, upgrade, and repair. The common legal understanding is that the dam owner is the developer of the dam, and is therefore responsible for the potential impacts, which the impoundment of water may have on upstream or downstream life, property and environment. It is the owner who holds the various legal permits for the dam and is legally responsible for maintaining the dam in a safe condition and for operating it safely. For the detail of the parties involved and their roles and responsibilities, please consult the dam safety guideline.

3. Legal and Regulatory Framework

Ethiopia does not have specific dam and dam safety legislation or administration as some other developed countries do. These legislations require that all dams be periodically inspected to ensure that their continued operation and use does not constitute a hazard to life and property downstream. Rather, there are some broader legal obligations under Ethiopian law which owners need to appreciate. The policies and legislations which are somehow related to dams and dam safety issues are listed described below (for the detail, see Section 3 of this ESMF):

- Ethiopian Water Resources Management Policy (1999)

- Ethiopian Water Resources Management Proclamation (Proclamation No. 197/2000)
- Water Resources Management Regulations
- Environmental Laws
  The environmental laws related to the dam construction are: Environmental Policy of Ethiopia (1997), National Conservation Strategy, Environmental Pollution Control (No.295/2002), Environmental Impact Assessment (No 299/2002), EIA Assessment Guideline Document in 2002 and EIA Procedural Guideline in 2003.
- Occupational Health and Safety law (Proclamation No.42/1993)

4. Dam Failure and Dam Hazard classification

Dam Failure

If a dam fail, the owner is likely to be held legally liable for all associated damage. To minimize the possibility of failure and the attached liability, the owner should use the services of a suitably qualified engineer to design and construct the dam; make periodic visual inspections of the dam; monitor conditions that may affect the safety of the dam; perform regular maintenance; carry out repairs where and when required to meet current design and construction standards; and have an experienced dam engineer investigate any unusual conditions which could result in partial or total failure.

The three major failures modes of small dams in Ethiopia are:

- Sedimentation behind dam : sediments deposited clog outlet and intake structures
- Seepage loss through foundation and embankment
- low catchment yield and low volume of stored water in dams

The most common causes for failure of small dams in Ethiopia would be as follows:

a) Design is not adequate (hydrological, geotechnical, hydraulic).
b) Very limited site investigations are undertaken and consequently understanding of site conditions is poor.
c) Embankment placement methods are substandard eg. soil compaction methods.
d) lack of watershed management practices
e) Maintenance or inspection frequencies are inadequate.

To avoid or minimize the problem, the dam owner (Bureau of Water Resource) has the responsibility to inspect safety of the dam periodically during all phases of the dam design, construction, and operation and maintenance.

Dam Hazard Classification

The destructive force unleashed by an uncontrolled escape of water stored behind a dam has the potential to harm people, property and the local environment. The consequential losses can include loss of life, socio-economic, financial and environmental losses. Measures can be taken to reduce the risk to an acceptable level and that is what dam safety is about. For this ESMF, three dam hazard classification levels are adopted as low, significant, and high, listed in order of increasing adverse incremental consequences.

Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property. Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure. Dams assigned the high hazard potential classification are those where

failure or mis-operation will probably cause loss of human life. The small dam safety guideline is intended for the owner of dams with hazard potential classification of Low.

5. Planning of small Dams

There are some fundamental principles which should be applied through the investigation, design, construction and commissioning stages to achieve an adequate level of safety. The principles are:

i. the competence and experience of the owner's agents relative to the nature and dam hazard category of the dam, must be appropriate in all areas;
ii. there must be a cooperative and trusting relationship between the owner and technical advisers, and the designers must be given full control over decision making in critical areas;
iii. the owner must agree to apply the appropriate level of funding for investigations, design and construction to reduce the chances of critically important issues (particularly related to foundations) being not sufficiently well assessed or under protected;
iv. the designer/technical adviser has a duty not to compromise unduly due to financial pressures from the owner, developer or contractor;
v. continuity of key technical advice should be maintained throughout all stages of the dam from development, through design, construction and commissioning, to reduce chances of critical points of design philosophy and intent being misinterpreted during construction or commissioning.

Dam site investigation

Selecting the Dam Site

When choosing the location and size, the dam owner should also take into account what would happen if the dam failed suddenly and whether it would result in loss of life, injury to persons or livestock, damage to houses, buildings, roads, highways or railroads. The owner of the dam should ensure to avoid locating the dam where run-off from houses, dairies or septic systems can pollute the water.

Considerations at Investigation Stage

Technical Consideration

Site selection and site investigations are critical components to the success or failure of a dam. Regarding the technical consideration the following important aspects should be considered:

a. The catchment is the area of land from which run-off is to be collected. If it is the main source of water supply, make sure that it is capable of yielding enough water to maintain both, the supply in the dam and the required releases over all periods of intended use. The catchment area however should not be too large, as it will then require a big and expensive overflow system (or spillway) to safely pass excess run-off from heavy rainfall without overtopping the dam.
b. Topographical features such as slope, width and height of dam, as well as reservoir capacity will influence construction costs.
c. Conducting site tests to establish the material properties for the embankment and foundation.
d. A good location for a spillway that will effectively handle runoff and minimize erosion.
e. Watershed activities that can affect the water quality or quantity of runoff.

Environmental Considerations

Dams with their associated reservoirs can have substantial environmental effects and any existing dam or new project must comply with the Ethiopian environmental and environmental

legislations and associated licensing or permit requirements. It also complies with World Bank Safety of Dam Operational Policy (OP/BP. 4.37). It should be recognized at the outset that dam developments have effects extending beyond the immediate confines of the dam and inundated areas. For example;

- Reservoir slope stability may become a dam safety issue due to the risk of overtopping caused by large volumes of reservoir water being displaced by slope failures.
- Sitting of the dam/reservoir must take into consideration the local earthquake and faulting activity which may cause breaching of the dam
- Groundwater level changes may affect stability and land use around the reservoir margins and possibly adjacent to the downstream river, as a result of changed water levels.
- Trapping of sediments in the reservoir can result in upstream shoaling and loss of reservoir storage.
- Flora/fauna effects may occur in storage basin, downstream, and in passage around and through the dam.
- Minimum flow maintenance downstream of the dam to ensure the survival of flora and fauna, and to reduce causes of stream bed deterioration.
- Social development/changes to downstream use given the changed flood situation.

Dam Design

Embankment dams Design

The single most common cause of earthen dam failures is overtopping of the embankment. An undersized spillway will lead to overtopping; therefore spillway design is critical to reservoirs. The spillway must be located such that discharge will not erode or undermine the toe of the dam. If the banks of the spillway are made of erosive material, provision must be made for their protection. Consideration must be given to the hazard to human life and potential property damage that may result from the failure of the dam or excessive flow rates through the spillway. Further consideration must be given to the likelihood of downstream development that may result in an elevation of the hazard classification.

Extreme Events

Large earthquakes, storm/flood activity and failure of upstream dams can be considered extreme events. The risk of failure from these events is minimized by using engineering design standards and relevant guidelines incorporating adequate margins of safety. Emergency preparedness set up well in advance is the only available measure of reducing the impact when a dam failure is about to happen.

Sedimentation

The effective life of many of small dams is reduced by excessive siltation – some small dams silt up after only a few years. This issue is poorly covered in the many small dam design manuals that are available, as they mostly focus on the civil engineering design and construction aspects. Appropriate methods/tools have to be chosen to predict, and where possible reduce, siltation rates in small dams.

6. Construction of a Dam

The quality of construction is all-important to dam safety. As far as construction is concerned, the following requirements are necessary from the dam safety viewpoint:

- the contractors must be suitably experienced and committed to achieving the standards of work specified;

- the level of supervision of the works, quality assurance procedures and designer continuity, must be appropriate to the scale and complexity of the dam;
- the owner must recognize that inherent uncertainties may remain after design investigations and only be revealed during construction, and have funding in place to deal with costs arising from additional requirements identified during construction;
- any area identified in the design process as requiring confirmation by the designer during construction, must be totally under the designer's control, and no design change, however small, shall be made without the designer's review and formal approval;
- a suitably detailed design report and drawings showing the as-built structure of all components of the dam and foundation shall be developed as an on-going and integral part of the construction supervision process, and be prepared after completion of each component so that there is a reliable record to refer to at all times in the future.

Therefore, the dam owner should ensure all the above mentioned requirements are fulfilled and complied.

Selecting the contractor

The use of inexperienced contractors and/or inadequate supervision can develop into an expensive liability. Nothing can take the place of a reputable contractor, using appropriate equipment and experienced machine operators and working under supervision of an experienced engineer.

Construction Supervision

Construction supervision is an important phase of dam construction. Supervision is meant to ensure that the design factors and specification requirements have actually been included in the final product.

If foundation preparation, material selection, outlet/spillway installation and embankment compaction are not properly carried out then the safety of the dam will be compromised. So, for all small dam types (both earthen and rock fill) expected to be constructed, all the dam safety requirements applicable should be considered accordingly.

7. Safety Surveillance

Purpose of Regular Inspection

The purpose of a dam safety surveillance program is to avoid failure of the dam, by giving early warning of any kind of symptom of trouble as early as possible. It is the most economical and effective means an owner has of maximizing the long-term safety and survival of the dam. Its primary purpose is to monitor the condition and performance of the dam and its surroundings.

Frequency of Inspections

The frequency of inspection required for an effective program of surveillance depends on a variety of factors including:

- Size or capacity of the dam;
- Condition of the dam; and
- Potential for damage resulting from failure of the dam (represented by the hazard category).

Adoption of the inspection frequency for a particular dam is the responsibility of the owner, though professional advice should be sought for large dams or those categorized under significant and high hazard dams.

According to the dam safety guidelines prepared for AGP-I, the suggested inspection frequencies for small dams of less than 15 m height for the two levels surveillance (quick visual inspection

and comprehensive examination) is presented in the table below and should be followed critically.

Quick Visual Inspection	
Dam Hazard Potential classification	
High	twice weekly
Significant	weekly
Low	fortnightly
Comprehensive Examination	
Dam Hazard Potential classification	
High	monthly
Significant	3-monthly
Low	twice-yearly

Special Inspections

Special inspections will be required after unusual events such as earthquakes, major floods, rapid drawdown or volcanic activity. Special inspections should enable the dam owner to become aware of faults before partial or total failure occurs. Times when inspections additional to those above are recommended are:

- before a predicted major rainstorm (check embankment, spillway and outlet pipe);
- during and after severe rainstorms (check embankment, spillway and outlet pipe);
- after any earthquake, whether directly felt on the owner's property or reported by local news media (check all aspects of the dam).

Inspections should be made during and after construction and also during and immediately after the first filling of the storage.

Dealing with Problems

A systematic program of safety surveillance should maximize the likelihood that any developing conditions likely to cause failure would be found before it is too late. Surveillance will also help early detection of problems before they become major repair bills. As identified earlier typical problems (many of which are treatable if found early enough) are most likely to fall into one of the following categories: seepage/leakage; erosion; cracking; deformation/movement; concrete structure defects; and spillway blockage.

Instrumentation and Monitoring

Instrumentation at a dam furnishes data to determine if the completed structure is functioning as intended, provides a continuing surveillance of the structure, and is an indicator of developments which may endanger its safety. Typical items instrumented or monitored include;

- profiles and condition, deformations, seepages or damp areas (visual)
- reservoir water levels which relate to dam loads and flood behaviour
- local rainfall which relates to background seepages
- drainage and distinguishable seepages which relate to control of leakage water flow
- Clarity of seepage flow which relates to potential erosion of embankment or foundation material.
- water pressures within the dam and foundations which relate to structural behavior
- movement or deformation of the dam surface and internal structure which relates to structural behavior
- stresses within the dam which relate to structural behavior
- seismic acceleration which relates to structural behavior

8. Operation and Maintenance of Dams

Effective and ongoing operation, maintenance and surveillance procedures are essential to ensure the continued viability and safety of a dam and its appurtenant structures. Poor operation, maintenance and surveillance will invariably result in abnormal deterioration, reduced life expectancy and possibility of failure. The proper operation, maintenance and surveillance of a dam provide protection for the owner and the general public. Furthermore, the cost of good operation, maintenance and surveillance procedures is small compared with the cost and consequences of a dam failure which could include major repairs, loss of life, property damage and litigation.

Because many small dams fail through lack of maintenance, it is prudent to have a definite and systematic maintenance plan.

The maintenance plan should be decided upon when the construction work on the dam is completed. It will affect the life of the storage if you do not maintain it properly. A good plan should include the practices to be used, as well as the approximate time of the year when they are applicable.

Annex 9: Summary of Stakeholder Consultations

11.1. Federal Level Consultation

Federal level consultation was held with experts from MoA, plant heath regulatory directorate; and with FAO representative working as national IPM consultant. The main issue for discussion was pest and pesticide product management. In addition, federal level consultation with Archaeology and Cultural Heritage Researcher from Authority for Research and Conservation of Cultural Heritages (ARCCH), Cultural Heritage Research Directorate on the matter related to the Physical Cultural Resources. The summary of these consultations is presented below.

Policies on plant protection and IPM

Ethiopia has no stand alone crop protection and IPM policy. However, it has rural development strategies and policies that clearly indicated the development should ensure sustainable development in which the appropriate crop protection work is one. The environmental policy of Ethiopia in its agriculture sector policy also state that to base, where possible, increased agricultural production on sustainably improving and intensifying existing farming systems by developing and disseminating technologies which are biologically stable, appropriate under the prevailing environmental and socio-cultural conditions for farmers, economically viable and environmentally beneficial. This is one demonstration the country has policy direction to use environmentally safe crop protection measures for the sustainable agriculture.

To manage both regular and migratory pests, the Ministry of Agriculture has established plant health general directorate and crop protection directorate under it. The MoA has also been recruiting additional staffs for the directorates. In this regard, the ministry has been providing comprehensive crop protection training at different levels including farmers. Agricultural Universities have also been giving specialized graduate level program in crop protection related disciplines.

Recognizing the intolerable magnitude of losses due to pests and the need to introduce ecologically preferable, socially acceptable, cost effective, rational and sustainable pest management technologies to farmers, IPM has been accepted in Ethiopia as a strategy for tackling the problem. The Ministry of Agriculture, through its Plant Health Regulatory Directorate, has drafted Guideline on the Implementation of IPM for Small-Scale Irrigation. This guideline is prepared based on the legal frameworks that are enacted in Ethiopia related to pesticide management in particular, and to environmental and social issues in general. According to the guideline, the guiding principles for the implementation of IPM in Ethiopia are outlined below.

Pesticide Product Management

The country has proclamation and regulation for the registration and control of pesticide. The MoA through its plant health regulatory directorate is responsible for the registration and control of pesticide. The pesticide regulation is enacted and enforced by the government through registration and monitoring. The distribution of the pesticide is done by the registrant, whereas, the MoA monitor the marketing and use of pesticides. The registration of pesticide is functioning effectively, but the regulation of the application and storage of pesticides has been very much limited.

There is a functioning pesticide licensing system for traders, mass importers, local dealers and retailer. All are licensed and the system regularly tries to monitor the stocking and the sale of pesticide by the different dealers. As much as possible, the government is working to avoid accumulation of obsolete pesticide.

Guidelines are produced and distributed to the grass root level to help them monitor pesticide distribution, application, handling and storage. But there are enough data to compliment that the guidelines have not been reaching all the smallholder farmers who have been using pesticides.

Physical Cultural Resources Management

During AGP-I implementation period, the involvement of cultural and tourism bureau and/or office both at Woreda and region level is absent when environmental and social assessments were done for AGP-I subprojects. However, the impacts of subprojects on physical cultural resources were captured during the ESA. During the consultation, it is recommended that, the regional and Woreda level cultural and tourism bureau and office shall be consulted during ESA and review of the ESA reports. Focal person from the bureaus and offices shall be represented being Technical Committee member.

11.2. Regional Level Consultation

For the preparation of the ESMF for AGP-II, consultation of AGP-II stakeholders were held in the four AGP-II intervention regions with experts and process owners of AGP-II implementing agencies including bureau water resources development, bureau of road, bureau of Agriculture, bureau of marketing and trade, Bureau of EPLAUA, and regional plant health clinics. The regional level AGP coordinators have also participated on the stakeholder consultation.

The consultation focused on the implementation the ESMF with respect to experience of the ESMF implementation during the first generation of AGP-I implementation period; the challenges/gaps encountered in implementing the ESMF in this same period of implementation; and solution/action points to be taken for the coming AGP-II implementation.

Based on this, the following points/issues were raised by the participants of the consultation; and their views were captured:

1. **Benefits that the ESMF implementation has brought during the AGP-I implementation**

Participants of the regional level stakeholder consultations have commented the following benefits that the ESMF has brought during AGP-I implementation time.

- ✓ The process, procedures and institutional arrangement set in the ESMF to address the environmental and social safeguards issues are clear, and helped us to consider the same though there are some limitations. The capacity building activities at different level on the ESMF also enabled us to consider the environmental and social issues when implementing subprojects. This helped us to consider environmental and social safeguards issues more deeply in all sectors that are implementing AGP than before due to the increased awareness on the ESMF;
- ✓ In the earlier time, the environmental analysis was done by the environmentalist only, but at this time, it is becoming a multidisciplinary work though there is limitation;
- ✓ The social safeguards issues are also getting attention for public subprojects which was not before;
- ✓ For those subprojects for which proper environmental and social safeguards issues are addressed, the ESMF has avoided unfeasible subprojects, avoid social conflicts (brought social sustainability), and the ESMF considered as a project management tool has improved project design to address sustainable development;
- ✓ Due to the implementation of the ESMF to sub projects, social conflicts avoided, land loss by community reduced, forest area protected, water and soil conservation activities improved …etc .The infrastructure sub projects are designed in a sustainable way.

However, the participants identified the following general gaps during the implementation of the ESMF;

- ✓ Limitation in awareness, and misconception by implementing agencies that environmental and social consideration delay subproject implementation;
- ✓ Limitation in multidisciplinary work in doing ESIA study though there is progress. Only the environmentalist prepares the report based on his observation and analysis. Most of the time, the environmentalist did not take data from other professional (sociologist, agronomist, soil scientist, geologies, water/irrigation engineer, others) working as a team on the feasibility and design work. This led to poor quality ESIA report, and hence has consequence in the implementation of the mitigation measures.

2. Quality of the safeguard instruments prepared

The participants responded that there was clear gap in producing quality ESIA and ESMP report like limited consultation of the community while conducting environmental and social assessment; environmental and social baseline condition description is poorly done due to less time budgeted for this work and basing on secondary data; limitation in capacity by the expert in producing quality reports; the TOR for the environmental and social assessment did not prepared in such a way that to guide the assessor to produce the desired quality report (some elements are not explicitly tasked to the assessor); and limited attention by the experts to environmental and social assessment giving more emphasis to the physical implementation of the subproject.

The main cause for the quality problem were the TOR prepared for the ESIA study are not strictly followed and even some of the TORs are not well done and approved by the regulatory bodies prior to undertaking the ESA; the time budgeted for the ESA study is small; problem in scope definition for the ESA study; experience and capacity limitation in carrying out ESA; in most cases the analysis is done based on secondary data; In most sector there are no environmentalist that is responsible for the environmental issue for the subprojects/ e.g. Regional Market and Cooperative bureaus, Regional Road Bureaus); in most cases there are limited attention by bureau and/or office heads for the ESA study and are doing for the sake of requirement and some ESA is carried out by non- environmental professionals.

The action points to reverse this situation in AGP-II, the following are proposed: sufficient time has to be provided/budgeted to carry out the ESA study; the PAPs has to be meaningfully consulted using the appropriate tools and documented; preparing the TOR in such a way that it include all the very important tasks to be done by the assessor, and should be reviewed and cleared by the regulatory body at each level before the ESA is resumed; the prepared TOR should be strictly followed and the report produced should be reviewed and appraised at field level against the TOR; and continued capacity building trainings and technical assistances based on need assessment.

3. Management of Social Safeguard Issues

There is limitation in managing the social safeguard issues like land acquisition and property losses, and water user conflicts between the upstream and downstream communities when implementing small-scale irrigation subprojects. Some respondents especially from the regional water resources development bureau reflected that it is difficult to identify the exact location of irrigation infrastructures like main and secondary canals during the feasibility study time in which the ESA is one so that it is not possible at this time the exact PAPs and quantify the amount of losses and the amount of compensation to be paid. In case of rural feeder road construction and

market center development infrastructure subprojects, the social safeguard issues related to land acquisition and property losses were are managed but there is limitation especially in carrying out the socio-economic survey and preparing RAP/, and documenting it as stipulated in the ESMF.

Consultation in one region reveals that the communities are consulted on the land acquisition by the subproject and its impact on their property loss. As the community needs the sub project to be implemented they do not bother about the piece of property or land loss by the subproject. Hence only the consultation minute is attached with the ESIA document. This minimizes the grievance of the community during implementation. Generally, all regions mentioned that no significant case is encountered related to land acquisition and property losses. This is due to the nature (linear subprojects) and scale (small scale) of the subprojects. In case when individual parcels are affected by canals, the compensation of land is given by the local government and the agreements are done at the study and design time with the consultation of the community though there is limitation in proper documentation of the cases.

Regarding the social safeguard issues related to water user conflict between the upstream and downstream communities; there is also limitation in managing this because the ESA did not address these issues as required which is caused by mainly capacity problem in defining the scope of the ESA and consulting the communities, and incorporating their ideas in the subproject design. Most of the time, water balance is not done during the feasibility and design stage. For those subprojects which water balance is done, there is limitation in implementing it.

To reverse the situation, the participants recommended that proper scoping should be done and the areas of concern/influence should be explicitly articulated in the TOR for the ESA; the socio-economic survey should be properly done and RAP/ should be done, and documented in whatever cases; for river diversion subprojects, the potential PAPs, the upstream & downstream communities including the communities in the command areas has to be consulted and the subprojects should address the interest of all of these parties. For this, it is better to follow basin approach rather than subproject approach when implementing SSI subprojects.

4. Implementation of mitigation measures and monitoring its implementation

The implementation of the mitigation measures identified and planned in the ESMP has limitation due to:

- Implementing agencies focus mainly on the physical implementation of subprojects with limited attention to the implementation of the ESMP;
- No specification for the mitigation measures on the Bill of Quantities (BoQ) and not assigning cost for the mitigation measures to be implemented. Though the mitigation measures costs are estimated like in road subprojects, these costs are not specified in the bill of quantity (BoQ) and are not entered in to the contract agreement with contractors. Environmental clauses are absent for the implementation of the mitigation measures when entering contract agreement with contractors. This leads some mitigation measures that need to be implemented by the contractor during the construction time not implemented;
- Contractors also have limited attention to and awareness about the environmental and social safeguard issues. Though there are agreement in some cases between the contractor and the client on the implementation of environmental and social mitigation measures, the construction supervision engineer may not strictly monitor the implementation of these, and left not implemented;

- Due to low sector integration: some mitigation measures like implementation of watershed management activities (which could have been implemented office/bureau of agriculture) are not implemented in integration with the small-scale irrigation and rural road subprojects;
- Some implementing agencies like water bureau fear that mitigation measures cost (environmental and social costs) may increase the cost of the irrigation subprojects that may lead to the subprojects are not financially feasible;
- Some ESMP reports lack quality and the mitigation measures may not be implementable at the ground;
- Some organizations like regional road bureau (for example in Amhara and SNNPR regions) have no environmentalist to ensure that environmental and social issues in all phases of the subprojects are well addressed. This leads to the environmental and social issues are not well managed as required;
- EPLAUA at regional and Woreda level are not working at full capacity in enforcing the law on those sectors that are resistant in implementing the ESMF as required. The EPLAUAs are not also fully involved in the monitoring and audit work. The main problem in this regard as mentioned by the regional EPLAUA is that there is problem in logistic especially mobility problem for monitoring and auditing activities for this multi-sector and numerous AGP subprojects.

To reverse this situation, the following action points are recommended by the participants:

- ✓ The cost of each mitigation measures should be specified like other subproject cost and should be included in the contract agreement through environmental clauses;
- ✓ Mitigation measures that may be implemented by the community contribution like soil and water conservation activities need to be identified and communicated to the relevant sector at Woreda and regional level;
- ✓ Sectors need to be integrated for the effective implementation of the mitigation measures. Formal commutation among sector implementing agencies should be established in implementing the ESMF;
- ✓ Implementing agencies should implement monitoring activities integrating with regular subproject implementation monitoring. The implementing agencies need to establish systemic environmental and social monitoring;
- ✓ If it is possible, it is better to recruit environmentalist for regional implementing agencies that have environmental and social concerns like road bureaus;
- ✓ EPLAUAs at Regional and Woreda level shall work to enforce the environmental and social laws for those resistant to the implementation of the ESMF. They should also work fully to monitor and audit the ESMF performance;
- ✓ Implementation agencies should not do any payment for the construction activities unless the implementing agencies get environmental and social clearance certificate from EPLAUA at regional level;
- ✓ Continuous awareness creation program for decision makers;
- ✓ Continuous technical support at all level for the effective implementation of the ESMF

5. Pest and pesticide product management

The participants from BoAs and regional plant health clinics mentioned that the environmental and health risks and impacts due to the pesticide use are becoming critical. This is mainly due to the unsafe use of the pesticide by the farmers as there is limited awareness among the framers in using IPM and safe management of pesticide. Farmers get pesticide supply from the cooperatives, private sectors and some non-licensed traders. Some of the pesticide that the farmers have been

using is hazardous. Some farmers are not using the recommended technologies for crop protection. Currently the regional BoAs have established quarantine departments to monitor the distribution and control of the pesticide. There is also limited attention on providing extension service on IPM and safe management of pesticide; the regulatory institution both federal and regional level should be strengthened; there is limited work on pest surveillance; and capacity problem in the regional plant health clinics in the identification of pest and recommendation of appropriate technologies in managing the pest including safe pesticide use; institutional mandate clarity problem among regional plant health clinics, regional quarantine and BoAs that is working the extension service on crop protection.

The participants recommended the following action points to be considered for the future especially during AGP-II period: the awareness of farmers in using IPM and safe management of pesticide should be improved by providing continuous training; scaling up of AGP-I work with technical support from FAO on the IPM capacity building training and establishment of farmer field schools (FFSs); strengthening the institution working on pest and pesticide product management like BoA, quarantine and regional plant health clinics; establishing regional forum among sectors/institutions working on pest and pesticide management.

6. Cumulative impact

The participants mentioned that there are potential cumulative environmental and social impacts of AGP alone and with other projects especially related to SSI subprojects. In some cases (like Dera Woreda of Amhara region), a number of shallow wells have been constructed without study on their feasibility. In other Woreda of the same region, there are diversion of a river by AGP and by other projects in a number of sites that is creating conflict among the irrigation water users found at different command areas along the river. The sustainability of these subprojects is also questionable as there is decrease in flow. In general, unless the issue is addressed in the future for other projects to come, it will be a serious problem in terms of the sustainability of the projects and social sustainability.

The participants from Oromia region indicated that there are real cases that a number of SSI subprojects (river diversion subprojects) implemented on the same river resulting social conflicts. In the same region, there is also a case which SSI subprojects share the same water sources for water supply and creating concern. If such problems here and there not managed timely in a sustainable manner, it will be serious social problems, and their sustainability is a great concern.

The participants recommended that the implementation of the irrigation subprojects should be with proper planning and study of the potential water resources especially basin based study rather than working on subproject based study; working more on the water recharge mechanisms like implementation of watershed management activities in integration with SSI subprojects to enhance the ground water potential establishing strong sector integration; diversifying/shifting to other water resource alternatives like micro-dams; promoting and implementing water efficient technologies; and giving more attention on the planning and study of water resources development.

7. Environmental and social safeguard issues that need to be addressed in AGP-II

- Like that of dam safety guideline prepared for AGP-I, safety guideline for SSI irrigation infrastructures has to be prepared to monitor the sustainability and safety of these infrastructures;
- Sector AGP-II implementing agencies like water bureau/Irrigation agencies need to have environmental and social guideline to manage their environmental and social issues. The best practice in this regard is that regional and federal road authorities/bureaus have their own environmental and social management guidelines;
- The feasibility and design for SSI work shall be basin base rather than subproject base;
- Planning and designing integrated water management system for irrigation, domestic and others purpose;
- Introduction and promotion of water efficient technologies to tackle the water shortage and adapt the impact of climate change;
- Addressing the climate change issues as one of environmental, social and economic concern that need to be well addressed in AGP-II;

11.3. Woreda Level Consultation

Pest and pesticide product management

According to the response from Woreda TCs, farmers use both cultural, mechanical and other IPM practices, and pesticide to manage pests including weeds. However, most of the time, they

use pesticide. They purchase pesticide from cooperative unions and other non-licensed pesticide traders. The main challenges related to pesticide use are the cost of chemicals is becoming high and farmers buy from non-licensed and unsafe pesticide; farmers have limitation in using IPM; most of the time farmers do not use the proper rate of pesticides; and farmers practices unsafe pesticide and pesticide product management resulting environmental and human health risk due to limitation in extension service in this regards.

The participants of the consultation recommended the following solution for the coming AGP-II: strengthening the crop protection extension services on the use of IPM approaches and safe use of pesticide; continuous capacity building and awareness creation activities on IPM and the safe use of pesticide for Woreda experts, Das, and farmers; strengthening the mechanism for the control of the non-licensed pesticide traders.

Subproject screening and ESMP preparation

Woreda TCs indicated that, in most cases, subproject eligibility checklists were filled by Natural Resources Management DAs and, in some cases by KDC members along with the DAs. At Woreda level, experts of EPLAU and other implementing sectors carried out environmental and social screening and ESA study for each identified subprojects at Woreda level. Technical supports in ESMF implementation was done at all level. Woreda EPLAUAs also undertake field appraisal of ESA reports before approving subproject for AGP financing. The main challenges in implementing the ESMF at Woreda level are: limitation in awareness on responsibilities in implementing the ESMF as required by implementing agencies considering ESMF is the responsibility of EPLAUA; implementation of some subprojects prior to review and approval of safeguard subprojects considering the impacts are minimal especially for those small scale subprojects; high turnover of trained staffs on ESMF; and limited attention by Woreda TC members to ESMF implementation.

The participants forwarded the following recommendations for AGP-II: environmental and social laws shall be enforced for those institutions which implement subprojects without considering environmental and social issues; strengthening the environmental and social monitoring system; allocating appreciable amount of many for the implementation of ESMP including RAP/.

Quality of environmental and social safeguard instruments

The Woreda TCs indicated that there are limitations on the qualities of safeguard instruments prepared like environmental and social screening reports and ESMP prepared. This is manifested by copy paste of ESMP reports from others subprojects which are not similar in nature and scale hence non specific ESMP; and limitation in real public participation. The major factors for this are skill gap, turnover of skilled and trained staffs, and lack of commitment in ESMP preparation by IA and under estimation of the environmental and social impacts.

Implementation of the ESMP and other safeguard instruments prepared

Woreda participants/TC members mentioned that for social safeguard issues related to land acquisition and property losses, PAPs are compensated in kind (land for land), cash (for lost assets) or both. In most cases since farmers need the subprojects like SSI subprojects and rural road for example, they provide lands voluntarily (if any). There is no as such significant social safeguard issues related to this matter. The problem is documentation of all these issues for evidence.

The main challenges faced during AGP-I implementation when implementing the ESMF are limited integration among sectors (like office of agriculture and water office/irrigation agency) in implementing the mitigation measures identified and planned in the ESMP; some implementing agencies are not implementing ESMP as per the plan; some implementing agencies did not transfer mitigation measures to contractors to be implemented; and there is also limitation in budgeting for mitigation measures; and limited attention for environmental and social monitoring.

The status of monitoring of ESMP implementation and other safeguard instruments

Environmental and social monitoring at Woreda level by AGP-I implementing agencies has limitation. Even Woreda EPLAUA did not conduct environmental and social monitoring and auditing as required due to lack of transport. There is also limited commencement from Woreda level decision makers for this activity. Most of the time, their focus is to monitor and follow up the physical implementation of the subprojects. To reverse this situation, the Woreda TC members recommended that each implementing agency need to conduct strong environmental and monitoring and follow up to enhance environmental and social performance of the AGP-II.

Positive and Negative Impact of AGP during AGP-I

Some of the major impacts that AGP-I brought include, as per the Woreda TCs, agricultural production and productivity increased due to different intervention like SSI and micro-irrigation; provided employment opportunities for youth; human and institutional capacity building activities done including on ESMF improved their implementation capacity; and environmental rehabilitation of degraded area were increased by implementation of effective watershed management subprojects. However, there are some drawbacks like increased soil erosion due to implementation of SSI and road construction subprojects resulting siltation to streams and rivers; and land sliding along road side due to instability created from road cut.

Unaddressed environmental and social issues in AGP-I that we need to consider in AGP-2

As per the Woreda TCs, the following issues were not properly addressed during AGP-I and they should be addressed in AGP-II: payments were made for contractors without assuring the implementation of the proposed mitigation measures that were supposed to be done by contractors; costs for environmental and social management plan are not addressed independently from the main Bid Documents; and payment certificate were made without ensuring for effective

implementation of mitigation measures whose cost is included in the design of the main document by the responsible institution

11.4. Community/Kebele Level Consultation

Positive and Negative Impact of AGP during AGP-I

The consulted KDCs mentioned that the major positive impacts of AGP-I include food security is ensured by implementing irrigation subprojects; degraded areas rehabilitated through implementing watershed based soil and water conservation subprojects; and improved agricultural technology transfer to the farmer in the project intervention area even beyond. The negative impacts of AGP-I, as per the KDCs, include soil erosion excavation activities when implementing infrastructure subprojects; in some place increased social tension among irrigation water users; in some place there is water lodging due to irrigation subprojects resulted from not implementing mitigation measures like drainage and implementing water efficient technologies.

Involvement of the local community in subproject identification, environmental and social screening, participating in environmental and social assessment

Most of the time the local community involves in sub project identification. In most cases, environmental and social screenings were carried out by DAs without the involvement of KDCs. In some Kebeles, KDCs were also involved in environmental and social screening. In most infrastructure projects like SSI, road, etc, the ESA study team participate the community especially project beneficiaries on matters related to the befit of the subproject, the contribution of the community in implementing the subprojects, and other related issues. However, though improving, there is limitation in participating the community specifically when identifying the impacts of the subproject on the environment and the community and vice versa, proposing mitigation measures, and monitoring and evaluation of the ESMP implementation. The main challenges in these regard are lack of information to do so, awareness problem and skill gap in doing so, commitment of experts working on ESA to participate the community in this matter.

Annex 10. List of Peoples Consulted

1. Lists of persons consulted at federal level

S/ No	Name	Organization	Responsibilities	Mobile number
1	Habtamu Tesfaye	ARCCH	Archaeology and Cultural Heritage Researcher	0913019221
2	Bayeh Mulatu (PhD)	FAO Ethiopia Office	National IPM Consultant	0913207797
3	Yismayike Yitagessu	MoA (Plant Health Regulatory Directorate - PHRD)	Chemist (working on Pesticide registration)	
4	Yeraswork Yilma	MoA (Plant Health Regulatory Directorate - PHRD)		0911000286

2. Lists of persons consulted at Regional Level

S/ No	**Name**	**Region**	**Organization**	**Responsibilities**	**Mobile number**
1	Ashagre Endayen	Amhara	BoA	Agronomist	0936749456
2	Abebe Aragaw	Amhara	Plant Health Clinic	Entomologist	0918710715
3	Yibelital Wondimnew	Amhara	Plant Health Clinic	Pathologist	0910359984
4	Yohannes Mekonon	Amhara	Trade and transport Bureau	Infrastructure Engineer	0918713456
5	Yigermal Tamir	Amhara	Rural Road Authority	Civil Engineer	0918763551
6	Mengesha Andualem	Amhara	EPLAUA	Environmentalist	0920764177
7	Daniel Getachew	Amhara	BoA	Water harvesting expert	0918701173
8	Abreham Ameshe	Amhara	Bureau of Water Resources Development	Environmentalist	0922554411
9	Abebaw Kebede	Amhara	Regional AGP-CU	Infrastructure Engineer	0918056080
10	Gezahegn Bekele	Amhara	Bureau of Water Resources Development	Study, design and supervision sub-process owner	0911092136
11	Sharew Anteneh	Amhara	Amhara design and study enterprise	Environmentalist	0911971517
12	Ayana Yehuala	Amhara	EPLAUA	Environmentalist	0918779323
13	Abebe Dessie	Amhara	BoA	Agricultural Extension and communication process owner	0912105652
14	Bizuayehu Atnafu	Amhara	BoA	Agricultural Extension and Training expert	0918781174
15	Zelalem Addis	Amhara	Bureau of Trade and Transport	Market Promotion Team Leader	0918704845
16	Minwyelet Temesgen	Amhara	Bureau of Trade and Transport	Market Infrastructure Expert	0918018613
17	Belaynesh Abayneh	Amhara	BoA	Horticulture Expert	0911532405
18	Mitiku Melaku	Amhara	BoA	Crop Protection Expert	0925263245
19	Melese Sentayehu	Amhara	Bureau of Water Resources Development	Irrigation and Drainage Design Process Owner	0918767731
20	Girmaw Belete	Amhara	Rural Road Authority	Road Resource Administration Process owner	0911829991
21	Melisachew Fentie	Amhara	EPLAUA	Environmental Sustainability Ensuring Core Process Owner	0936372001
22	Habtamu Segaw	Amhara	BoA	Regional AGP Coordinator	0918177327
23	Abebe Gizaw	Oromia	Oromia Road Authority	Sociologist, & Road Study Team coordinator	0912745703
24	Zebider Waqjira	Oromia	EPLAUA	Environmentalist	0911713416
25	Yifiru Hailegeorgis	Oromia	BoA	Plant Protection expert	0911876712
26	Samson Gizaw	Oromia	Regional AGP-CU	Infrastructure Engineer	0917218337
27	Zewdu Kassa	Oromia	Oromia Irrigation Development	Economist	0911341456

S/ No	Name	Region	Organization	Responsibilities	Mobile number
			Agency - OIDA		
28	Dagnachew Deleba	Oromia	OIDA	Agronomist	0911995537
29	Yohannes Geleta	Oromia	OIDA	Environmentalist	0911981665
30	Degefa Duga	Oromia	EPLAUA	Environmentalist	0911827315
31	Fikirte Beyene	Oromia	BoA	Agronomist	0912
32	Geremew Gomoro	Oromia	Regional AGP-CU	Environmental and Social Safeguards Specialists	0912208142
33	Teferi Abebe	SNNPR	Bureau of Culture and Tourism	Cultural resource protection Expert	0916029638
34	Debeb W/Mariam	SNNPR	BoA	Natural Resource Development expert	0916286881
35	Bisrat Endale	SNNPR	Road Authority	Design & contract admi. Engineer	0911556885
36	Fikrte Assefa,	SNNPR	EPLAUA	Biodiversity expert	0913727444
37	Yohannes Gezahagn	SNNPR	Irrigation Design and Study Agency - IDSA	Procurement specialist	0911331402
38	Temam Shek kemal	SNNPR	IDSA	Soil and Water conservation Expert	0926179377
39	Alemayehu Eiro	SNNPR	IDSA	Environmentalist	0916137822
40	Germame Honsebo	SNNPR	Regional Plant Health Clinic	Plant protection Expert	091095539
41	Belay G/Hiwot,	SNNPR	IDSA	Irrigation Agronomist	0916833899
42	Mesfen Eshetu	SNNPR	IDSA	Environmentalist	0911815621
43	Mulugeta Arega	SNNPR	BoA	Crop development Extension Expert	0912069928
44	Adane Kefele,	SNNPR	Regional AGP-CU	Infrastructure Engineer	0912069928
45	Gesesse Gebere,	SNNPR	BoA	Coffee and Species development Extension Expert	0934141139
46	Yitayewu Tezera	SNNPR	IDSA	,Socio-economist	0913976605
47	Anesa Gobaro	SNNPR	Animal Development Protection Agency	Head	0911066434
48	Abreham Astatike,	SNNPR	Market and cooperative bureau	Expert	0911384833
49	Fikiru Bireda	SNNPR	Regional AGP-CU	Environmental and social safeguards specialist	0913027255
50	Adugna Abreha	Tigray	Agricultural marketing Promotion Agency	Sub process Owner	0914720228
51	Haileslassie Fiseha	Tigray	EPLAUA	Process owner representative	0914734454
52	Hoftom Girmay	Tigray	BoA, NRM department	Socio-economist	0914723889
53	Daniel Weldemichael	Tigray	BoA	Crop protection Expert	0914726241
54	Selomon Negash	Tigray	Bureau of water Resources	Environmentalist	0914779433
55	Nigsti Hailay	Tigray	Bureau of water Resources	Socio-economist	0914045582

3. Lists of persons consulted at Woreda level

S/ No	Name	Woreda	Organization	Responsibilities	
Oromia Region					
1	Sisay Kebede	Dodola	Office of Agriculture	TC Member	0921252937
2	Birhanu Gutema	‘’	Office of Agriculture	AGP Focal person	0910040038
3	Kedir Sinkero	‘’	Livestock Agency	TC Member	0912265424
4	Sultan Genemo	‘’	Office of Agriculture	SC Member	0937297684
5	Abdu Guye	‘’	Irrigation Agency	TC Member	0926399457
6	Mitike Tafa	‘’	Women and Child office	TC Member	0940143565
7	Kebede Aman	‘’	Office of Agriculture	TC Member	0912083126
8	Leyila Negawo	‘’	Office of Agriculture	TC Member	0910089329
9	Yilma Zeleke	‘’	EPLAUA	TC Member	0920171078
10	Foziya Kedir	‘’	Office of Agriculture	TC Member	0920067974
11	Abebech Tefera	‘’	Trade and market Office	TC Member	0932197816
12	Awel Hinde	‘’	Road office	TC Member	0916491138
13	Negasa Tuke	‘’	Youth Development Office	TC Member	0912254171
14	Gosaye Abebe	‘’	Finance Office	TC Member	0913335822
15	Tegene Senbeta	Limmu Bilbilo	Office of Agriculture	AGP FP	
16	Siraj Abdela	‘’	Office of Agriculture	TC Member	
17	Endale Mekuria	‘’	Office of Agriculture	TC Member	
18	Girma Ede’e	‘’	EPLAUA	TC Member	
19	Jemal Deto	‘’	Youth and sport Office	TC Member	
20	Kedir Abishu	‘’	Livestock Agency	TC Member	
21	Tarecha Dida	‘’	Irrigation Office	TC Member	
22	Mengistu lema	‘’	Cooperative Office	TC Member	
23	Tegegn Shumi	‘’	Office of Agriculture	TC Member	
24	Bizuneh Regasa	‘’	Finance Office	TC Member	
25	Bilal Hirpho	‘’	Trade and market Office	TC Member	
26	Sileshi Muluneh	‘’	Women and Children Office	TC Member	
27	Yonas Tesfaye	Lume	Finance Office	TC Member	
28	Temesgen Jena	‘’	Livestock Office	TC Member	
29	Taye Eshetu	‘’	EPLAUA	TC Member	
30	Ibrahim Kedir	‘’	Youth and sport Office	TC Member	
31	Alemayehu Legese	‘’	Cooperative Office	TC Member	
32	Negga Beyene	‘’	Office of Agriculture	TC Member	
33	Feyisa Dadi	‘’	Road Office	TC Member	
34	Kemal Kawo	D/Tijo	Woreda Administration	TC Member	
35	Xaahir Bashi	“	Finance Office	TC Member	
36	Gannat Worqu	“	Irrigation Office	TC Member	
37	Amane Shake	“	Women and children Office	TC Member	
38	Sime Segne	“	Irrigation Agency	TC Member	
39	Amaan Biftu	“	Cooperative office	TC Member	
40	Abubaker aman	“	EPLAUA	TC Member	
41	Berhanu Muleta	“	Youth & Sport Office	TC Member	
42	Aberash Lemma	“	Trade and Market Office	SC Member	
43	Meseret Duruba	“	Youth & sport Office	SC Member	
44	Aster Gemechu	“	Office of Agriculture	TC Member	
45	Getu Tadesse	“	Women and children Office	SC Member	

S/ No	Name	Woreda	Organization	Responsibilities	
46	Kasim gusi	“	Trade & market Office	TC member	
47	Bashir Gamechu	“	Cooperative Office	SC Member	
48	Yisak Kumbe	“	EPLAUA	SC Member	
49	Kebede Negese	“	Office of Agriculture	SC Member	
50	Amane Mekuria	“	Women and children Office	TC Member	
51	Kaftamu Hude	“	Office of Agriculture	TC Member	
52	Dirriba Abdi	“	Office of Agriculture	TC Member	
53	Teganu Biro	“	Woreda Administration	SC Member	
54	Girma Debola	‘’	Office of Agriculture	AGP -FP	
55	Firew Abdi	Adea	Woreda Administration	SC Member	
56	Malka Kasa	“	Livestock Agency	SC Member	
57	Fiqaduu Kebede	“	Irrigation Agency	SC Member	
58	Girma Lemma	“	EPLAUA	TC Member	
59	Bekele Soboka	“	Office of Agriculture	TC Member	
60	Ararise Bayisa	“	Women and children Office	TC Member	
61	Tadesse Kebede	“	Irrigation Agency	TC Member	
62	Wesen Biru	“	Finance Office	TC Member	
63	Tadele Dendea	“	EPLAUA	SC Member	
64	Fikadu Biru	“	Trade & market Office	SC Member	
65	Gelaye Geleta	“	Road Office	SC Member	
Amhara Region					
66	Bishaw Melkamu	Dangila	EPLAUA	TC	911149527
67	Shashitu Kefale	Dangila	Office of Agriculture	TC	918126611
68	Bihonegn Wolie	Dangila	Office of Cooperative	TC	918071274
69	Kelemie Berihun	Dangila	Road Office	TC	918130902
70	Walelegn Desalegn	Dangila	Office of Agriculture	TC	918010637
71	Aschalew Mohamed	Dangila	Office of Agriculture	TC	918803085
72	Agumasie Tamru	Dangila	Office of Agriculture	TC	932271966
73	Tegegne Kefale	Dangila	Office of Agriculture	TC	918090398
74	Desalegn M	Dangila	Finance office	AGP Focal Person	912174627
75	Matebie Eskezia	Dangila	Office of Agriculture	TC	913950978
76	Fetene Haymanot	Dangila	Youth representative	CIG coordinator	918618043
77	G/kidan Tebikew	Guangua	EPLAUA	Process coordinator	910712640
78	Oumer Amare	Guangua	Office of Agriculture	NRM Process Owner	936586674
79	Feleke Yeneat	Guangua	Office of Agriculture	NRM Expert	9122921623
80	Tilahun Fentahun	Guangua	Office of Agriculture	AGP Focal Person	918742120
81	Esmail Jibril	Guangua	Office of Agriculture	Animal production expert	920511591
82	Girma Alene	Guangua	Office of Agriculture	Crop production expert	918087502
83	Tesera	Guangua	EPLAUA	AGP focal	920576213
84	Sisay Mitku	Dera	Office of Agriculture	Animal production expert	918317751
85	Tizazu Addis	Dera	Rural Road Office	Study and Design Expert	913726755
86	Getnet Assefa	Dera	Trade and Transport Office	AGP focal	913721704
87	Endihnew Sefene	Dera	Office of Agriculture	Irrigation coordinator	918092412
88	Mandefro Haile	Dera	Office of Agriculture	Crop Protection Expert	918214440
89	Zelalem Tiruneh	Dera	EPLAUA	Environmentalist	91801917
90	Yekoye Sendek	Dera	Office of Agriculture	Animal Production Expert	918020961
91	Dejen Tadese	Dera	Office of Agriculture	Process Owner	918808983
92	Getnet Telake	S/Achefe	Office of Agriculture	Animal production	918670547

S/ No	Name	Woreda	Organization	Responsibilities	
923	Misganaw Tesfahun	N/Achefe	Office of Agriculture	Gender & youth expert	928479673
94	Yeshambel Dereje	N/Achefe	Office of Agriculture	Agronomist	918010054
95	Aregaw Alem	N/Achefe	Office of Agriculture	Horticulturalist	938833212
96	Nitsuh Bitew	N/Achefe	Office of Agriculture	Soil & water conservation expert	918744680
97	Belete Kebede	N/Achefe	Office of Agriculture	Input extension expert	918713716
98	Melaku Simachew	N/Achefe		Project officer	918716115
99	Dagninet Adane	N/Achefe	Office of Agriculture	Live stock production Expert	918009982
100	Moges Ambaw	N/Achefe	Office of Agriculture		998317961
101	Abeie Chalie	N/Achefe	Office of Agriculture	AGP Focal Person	918122161
102	Menber Fenta	N/Achefe	EPLAUA	Environmental impact expert	935697070
103	Mengesha Achehe	Jabi	Office of Agriculture	AGP Technical Committee	913568007
104	Yechale Yirga	Jabi	Office of Agriculture	Forestry Expert	912377442
105	Abera Wolelaw	Jabi	Office of Agriculture	Irrigation coordinator	910044422
106	Mengistu Alemu	Jabi	Office of Agriculture	Agronomist	911886768
107	Bahru Molla	Jabi	Office of Agriculture	AGP Focal Person	910205520
108	Anley Liyew	Jabi	Agriculture office		913719661
109	Seyum Asimar	Jabi		SC Member	913112954
SNNPR					
110	Tamirat Kassa,	Chena	Office of Agriculture	Head	091253761
111	Geremew Birhanu	Chena	Marketing office	Coordinator	0913084683
112	Wasihun Asefa	Chena	Office of Agriculture	AGP focal person	0913427856
113	Tsion Hailu	Chena	Office of Agriculture	Crop Protection Experts	0925698938
114	Asenakew Alemu	Chena	Office of Agriculture, irrigation work process	Expert	0912495523
115	Gebabo G/Michael	Chena	EPLAUA	Expert	0916345032
116	Ayele Adelo	Chena	Roads and transport office	Expert	0910681515
117	Kifele G/silasse	Chena	Cooperative work process	Expert	0917253922
118	Mengot Bush	Chena	Office of Agriculture	Animal Production Expert	0917155401
119	Fekadu Bireda	Enemor Ener	Office of Agriculture	Head of Agriculture office	0912115387
120	Tadle Gerema,	Enemor Ener		Woreda Administrator	
121	Tewodiros Almu	Enemor Ener	Trade and Industry office	Head	09110441957
122	Degife Anisa	Enemor Ener	Road and transport office	Expert	0910914896
123	TsedaleAwelachew,	Enemor Ener	Women Affair office	Process owner	0913268059
124	Fetiya Denedi	Enemor Ener	Women Affair office	Expert	0913266869
125	Eliyase Murad	Enemor Ener	Youth Affair office	Expert	0920295200
126	Dineka Mohamed	Enemor Ener	Input work process	Expert	0913044644
127	Beharu Reji	Enemor Ener	Finance office	Head	0911835138
128	Hashim Asemera	Enemor Ener	Office of agriculture	Process Owner	0971281913
129	Abdulehadi TeShiga	Enemor Ener	Office of agriculture	Crop protection Expert	0911006522
130	Getu Kora	Enemor Ener	Office of agriculture	AGP focal Person	0911934011
131	Zenash Wnedemu	Enemor Ener	Office of agriculture	Animal development Expert	0926422819
132	Getachew Alemu	Gedeb	Office of agriculture	Irrigation Expert	0933167061
133	Sisay Bekele,	Gedeb	Office of agriculture	AGP focal person	0911035625

S/ No	Name	Woreda	Organization	Responsibilities	
134	Tariku Regassa,	Gedeb	Office of agriculture	Crop production expert	0910876970
135	Kifele Kebede	Gedeb	Office of agriculture	crop protection Expert	0910885857
136	Shumiye Mulugeta	Gedeb	EPLAUA	Environmentalist	0924690578
137	Tadesse Tilahune	Gedeb	Cooperative Office	Expert	0910625574
138	Mesifen Tugo	Gedeb	Office of agriculture	Animal protection expert	0913505303
139	Eserael Tefera	Gedeb	Office of agriculture	NRM expert	0916510812
140	Melese Getahune	Gedeb	Road and Transport Office	Expert	0916514538
141	Fanos Fondoga	Gedeb	Office of agriculture	Coffee and spices Expert	0935944541
142	Mitiku Ageze	Gedeb	Youth Affair Office	Expert	0917282177
143	Muzine Mohammed	Alicho Woriro	Office of Agriculture	Head	
144	Abdi Fereja	Alicho Woriro	Road and Transport Office	Expert	
145	Zeyinu Nasir	Alicho Woriro	Trade Office	Expert	
146	Tamirat Ermias	Alicho Woriro	Office of Agriculture	Expert	
147	Harune mohammed,	Alicho Woriro	Finance Office	Expert	
148	Absare Jemal	Alicho Woriro	Office of Agriculture	AGP Focal Person	
149	Abdie Ali	Alicho Woriro	Office of Agriculture	Expert	
150	Aman Keder	Alicho Woriro	Finance Office	Expert	
151	Aleyika Mohammed	Alicho Woriro	Road and Transport Office	Expert	
152	Mekiya Aiaib	Alicho Woriro	Youth Affair Office	Expert	
153	Kamila shukura	Alicho Woriro	Women Affair Office	Expert	
154	Kedir Wabaa	Alicho Woriro	Office of Agriculture	Vice Head of NRM Process	O913429308
155	Redi keder	Alicho Woriro	Office of Agriculture	AGP Finance Focal Person	
156	Netsanet Gezaheng	Alicho Woriro	Office of Agriculture	Expert	
Tigray Region					
157	Atakilti K/mariam		Office of Water Resource	Irrigation dep't Process Owner	0914435720
158	Ephrem Shifera		Finance Office	Expert	0914781256
159	Aregawi Welu		Finance	AGP finance officer	0914781434
160	Mulubrhan G/medhin		Office of Agriculture	NRM Expert	0914416248
161	Tewelde /mariam		Office of Agriculture	Extension Process Owner	0914286351
162	Abrahaley Gidey		Office of Water Resource	Head	0914188326
163	Mekonen Berhe		EPLAUA	Head	0914781076
164	Tewhasom Tesfay		EPLAUA	Environmentalist	0914780947
165	Mebrahtom Amare		Office of Agriculture	AGP Focal Person	0914781000
166	Hadush Haile		Woreda Administration	Officer	0914781603
167	T/mariam G/krstos		Office of Agriculture	AGP Focal Person	0924463209
168	Kidane Embaye		Woreda Administration	Vice -Administrator	0920569852
169	Hiluf G/slassie		Office of Agriculture	vice Head	0910444572
170	Negash Asfaha		Office of Agriculture	Cooperative Expert	0914190051
171	Taddesse Kidane		EPLAUA	Environmental Process Owner	0914777052
172	Teklay Tesfay		Office of Finance	Head	0914776639
173	Sisay Godefay		Office of Finance	Vice Head	0914992175
174	Mizan Tadesse		Woreda Administration	Head	0914106945
175	Zenebe Kidane		EPLAUA	Environmental process Owner	0921991253
176	Teame G/medhin		Office of Agriculture	Agri extension Process Owner	0914771758

S/ No	Name	Woreda	Organization	Responsibilities	
177	Teklemariam Zemichael		Office of Agriculture	Livestock dev't Process Owner	0924215890
178	Bisrat Tsegay		Office Agriculture	AGP Focal Person	0914217026
179	Ataklti Gezae		Office of Water Resource	Irrigation engineer	0914139979
180	Ataklti Brhane		Office of Finance	AGP finance officer	0914774949
181	Aweke Mebrahtu		Office of Agriculture	AGP Focal Person	0927822606
182	Girmay G/medhin		Office of Agriculture	AGP Focal Person	0914026996
183	Muez Hailu		Office of Agriculture	Head	0914766939
184	Haile Tesfay		Office of Finance	AGP finance officer	0939087971
185	Jejaw Demoz		Woreda Administration	Head	0927731286
186	Yilma Haisos		Office of Water Resource	Head	0914152969
187	Hilina Teferi		Office of Women Affairs	Expert	0914250401
188	Birhanu Gebeyehu		Office of Construction	Head	0914223339
189	Abeba Tefera		Office of Finance	Vice Head	0914248405

4. Lists of persons consulted at Community/Kebele level

S/ No	Name	Woreda	Kebele	Responsibilities
Oromia Region				
1	Abdurazak Abduljelil	Dodola	Barisa	KDC Member
2	Usman Fato	‘’	‘’	DA
3	Mohamed Biftu	‘’	‘’	KDC Member
4	Jarso Fato	‘’	‘’	KDC Member
5	Isa Jemal	‘’	‘’	KDC Member
6	Galgalu Wayyu	‘’	‘’	KDC Member
7	Amano Haji	‘’	‘’	KDC Member
8	Rukiya Wako	‘’	‘’	KDC Member
9	Amada Haji Hassen	‘’	‘’	KDC Member
10	Ahimed Haji	‘’	Geneta Hora	Kebele Chairman
11	Amano Bame	‘’	‘’	DA
12	Kedir Mohamed	‘’	‘’	KDC Member
13	Haji Fanjaja	‘’	‘’	KDC Member
14	Wayu Mishu	‘’	‘’	KDC Member
15	Kedir Arse	‘’	‘’	KDC Member
16	Wabe Logda	‘’	‘’	KDC Member
17	Haji Hebo	‘’	‘’	KDC Member
18	Amano Usala	‘’	‘’	KDC Member
19	Wariyo Jara	‘’	‘’	KDC Member
20	Tadese Asrat	Sinana	H/Bok	DA
21	Abdurazak Temam	"	"	DA
22	Abdure H/Kedir	"	"	KDC Member
23	Gishu Tola	"	"	KDC Member
24	Abersh Gurumu	"	"	KDC Member
25	Almaz Asafa	"	"	DA
26	Dasalny Daba	"	"	KDC Member
27	Girma Lami	"	"	KDC Member
28	Kamil A/Kadir	"	"	KDC Member
29	Teshome Qono	"	Basaasoo	KDC Member
30	M/Huseen Ede	"	"	KDC Member
31	Melesa Ejersa	"	"	KDC Member

S/ No	Name	Woreda	Kebele	Responsibilities
32	Girma Hayile	"	"	Kebele Chairman
33	Worqinash Gofee	"	"	KDC Member
34	Mohamed kedir	"	"	KDC Member
35	Shifara Mangistu	"	"	KDC Member
36	Tewabech Tsgaye	"	"	KDC Member
37	Mitike Ketema	"	"	KDC Member
38	Abebe Garedo	"	"	KDC Member
39	Geetuu Ada'awarf	Adea	Godino	KDC Member
40	Addis Mindaaye	"	"	KDC Member
41	Xaasoo Daggata	"	"	Kebele Chairman
42	Ashanafi Beyena	"	"	KDC Member
43	Asfaa Girma	"	"	KDC Member
44	Gadisa Bedhada	L/Bilbilo	L/Dima	KDC Member
45	Mesifin Hayile	"	"	KDC Member
46	Deresa Gizaw	"	"	KDC Member
47	Abebe Megrsa	"	"	Kebele Chairman
48	Tsegaye Alemu	"	"	DA
49	Bezu Tadu	"	"	KDC Member
50	Welansa Shiferaw	"	Chiba Michael	KDC Member
51	Desta Muleta	"	"	DA
52	Adanche Gizaw	"	"	DA
53	Tadelch Hunde	"	"	KDC Member
54	Gudata Abera	"	"	DA
55	Mokoni Nura	"	"	Member
56	Debale Adunya	"	"	Member
57	Gosaye Reba	"	"	Member
58	Balcha Baqqla	"	"	Member
59	Mangistu Gosa	"	"	Member
60	Luce Abebe	"	"	Member
61	Kebede Gizawu	D/Tijo	Qubsa Bora	Chairman
62	Gishu Dadhi	"	"	KDC Member
63	Jimmaa Tadese	"	"	KDC Member
64	Abara Lama	"	"	KDC Member
65	Ibsa Bayi	"	"	KDC Member
66	Janbo Oba	"	"	KDC Member
67	Abishu Xadecha	"	"	KDC Member
68	Umar Kawo	"	"	KDC Member
69	Adem Kedir	"	"	KDC Member
70	Gemechu Denise	"	"	KDC Member
71	Teshome Tola	"	"	KDC Member
72	Jameli Bakare	"	"	KDC Member
73	Dawudi Kedir	"	"	KDC Member
74	Ibrahim ahmed	Lume	Xade Dildima	DA
75	Dirgish Lema	"	"	KDC Member
76	Sisay Taquame	"	"	KDC Member
77	Getahun Zewde	"	"	KDC Member
78	Alemshat Getachew	"	"	KDC Member
79	Sinqinesh Jarso	"	"	KDC Member
80	Tshay Abay	"	"	KDC Member
81	Ketema Baye	"	"	KDC Member

S/ No	Name	Woreda	Kebele	Responsibilities
82	Tesfa Abate	"	"	Kebele Chairman
83	Tsigye Bekele	Lume	Jorro	Kebele Chairman
84	Tarike Tadese	"	"	KDC Member
85	Bate Demise	"	"	KDC Member
86	Roba Shum	"	"	KDC Member
87	Fanose Belayne	"	"	KDC Member
88	Jarso Dobba	"	"	KDC Member
89	Abebe Dirra	"	"	KDC Member
90	Leta Mulatu	"	"	KDC Member
91	Jima Shargoo	"	"	KDC Member
92	Tafari Bekele	"	"	KDC Member
93	Deme Biru	"	"	KDC Member
94	Negese Dereje	Adea	Hidi	Kebele Chairman
95	Nuguse Regasa	"	"	KDC Member
96	Workeneh Lema	"	"	KDC Member
97	Werku Gutema	"	"	KDC Member
98	Fanos Bekele	"	"	KDC Member
99	Abenet Amanuel	"	"	KDC Member
SNNPR Region				
100	Birihanu W/Senbet,	Chena	Babodo	Kebele chair man
101	Ketema Kebede	Chena	Babodo	KDC member
102	TadleW/Amanuael	Chena	Babodo	DA
103	Enitto shiferaw	Chena	Babodo	Farmer/Beneficiaries
104	Tadele W/senebet,	Chena	Babodo	Animal health Technician/KDC member
105	Senaiyit W/senebte,	Chena	Babodo	DA
106	Gezaheng Matto	Chena	Babodo	Kebele Chair person
107	Melese Mamo	Chena	Babodo	DA
108	Tehiriqu Sherita	Enemor Ener	Kochera	KDC member
109	Merima Heyiru	Enemor Ener	Kochera	KDC member
110	Tena Eshete	Enemor Ener	Kochera	KDC member
111	Tewabech Eremora	Enemor Ener	Kochera	KDC member
112	Amlework Anise	Enemor Ener	Kochera	KDC member
113	Amete Nida	Enemor Ener	Kochera	KDC member
114	Weletu Wolde Birehan	Enemor Ener	Kochera	KDC member
115	Blayenesh Nesiru	Enemor Ener	Kochera	KDC member
116	Bekele Iriba	Gedeb	Wobeta	KDC member
117	Tilahune Mija	Gedeb	Wobeta	KDC member
118	Kipe Gumi	Gedeb	Wobeta	KDC member
119	Bogale Deyaso	Gedeb	Wobeta	KDC member
120	Tadese bekalo	Gedeb	Wobeta	KDC member
121	Abere Mengesh	Gedeb	Wobeta	KDC member
122	Ayele kinite	Gedeb	Wobeta	KDC member
123	Abera urago	Gedeb	Wobeta	KDC member
124	Tamirat Deyaso	Gedeb	Wobeta	KDC member
125	Tadele Beraso	Gedeb	Wobeta	KDC member
126	Abera Beraso	Gedeb	Wobeta	KDC member
127	Degafe Kayamo	Gedeb	Wobeta	KDC member
128	Adanech Gelegelu	Gedeb	Wobeta	KDC member
129	Melese Beyene	Gedeb	Wobeta	KDC member
130	Shiferaw Door	Gedeb	Wobeta	KDC member

S/ No	Name	Woreda	Kebele	Responsibilities
131	Asayb Hussen	Alicho Woriro	Lemlem Kebele 3	Head of the KDC
132	Ahemedin Habib	Alicho Woriro	Lemlem Kebele 3	DA
133	MusbbaMohhmed	Alicho Woriro	Lemlem Kebele 3	KDC member
134	Mohammed Awel	Alicho Woriro	Lemlem Kebele 3	KDC member
135	Fedelu Kemal	Alicho Woriro	Lemlem Kebele 3	KDC member
136	Mursabo Redi	Alicho Woriro	Lemlem Kebele 3	KDC member
137	Nesre seid	Alicho Woriro	Lemlem Kebele 3	KDC member
138	Beharu Awel	Alicho Woriro	Lemlem Kebele 3	Benficiary
139	Awol Husen	Alicho Woriro	Lemlem Kebele 3	Benficiary
Amhara				
140	Getnet Mandefro	Dera	Wonchet	Kebele Administration
141	Bekalu Tarekegn	Dera	Wonchet	DA
142	Fente Fuade	S/Achefe	Abchikli	KDC member
143	Tefera Asmare	S/Achefe	Abchikli	KDC member
144	Dese Abie	S/Achefe	Abchikli	KDC member
145	Ke/meseganaw Gedif	S/Achefe	Abchikli	KDC member
146	Sisay Adamu	S/Achefe	Abchikli	KDC member
147	Meuquanint Mengstie	S/Achefe	Abchikli	DA
148	Worku Lake	S/Achefe	Lalibela	KDC member
149	Zeleke Temrat	S/Achefe	Lalibela	KDC member
150	Kumelachew Alemu	S/Achefe	Lalibela	KDC member
151	Wondimeneh Birhanu	S/Achefe	Lalibela	Elder
152	Getnet Adiss	S/Achefe	Lalibela	Beneficiary farmers
153	Melkamu Fentabil	S/Achefe	Lalibela	Beneficiary farmers
154	Kebede Tarekegne	N/Achefe	Ysmala	Beneficiary farmers
155	Belet Ayehu	N/Achefe	Ysmala	Beneficiary farmers
156	Alehegne Kume	N/Achefe	Ysmala	Kebele Administration
157	Ashenef Ejigu	Jabi	Guay	KDC member
158	Nurelegn Mengistu	Jabi	Guay	KDC member
159	Mengiste Fenta	Jabi	Guay	KDC member
160	Tobiaw Getahun	Jabi	Guay	KDC member
161	Meheretu Bezuayehu	Jabi	Guay	KDC member
162	Achame Gelaw	Jabi	Guay	KDC member
163	Mosie Gelaw	Jabi	Mender	KDC member
164	Melkamu Molla	Jabi	Mender	KDC member
165	Molla Fenta	Jabi	Mender	KDC member
166	Tamir Leyew	Jabi	Mender	KDC member
167	Addisu Ayen	Jabi	Mender	KDC member
168	Wondie Yeshaneh	Jabi	Mender	KDC member
169	Mekuriaw Getie	Jabi	Mender	KDC member
170	Yohannis Gessesse	Jabi	Mender	DA
171	Asmamaw Nigus	Dejen	T/yetnora	Kebele Manager
172	Tadele Sheferaw	Dejen	T/yetnora	KDC member
Tigray				
173	Bereket Tsegay			NRM DA
174	Aberu Molla			Crop DA
175	Abrha Mezgebe			NRM DA
176	Teklay W/slasie			Kebele Chair man
177	Guesh K/mariam			KDC member
178	Tsige Mebrahtom			KDC Member

S/ No	Name	Woreda	Kebele	Responsibilities
179	G/hiwot Fikadu			Livestock DA
180	G/Hiwet Kahsay			KDC member
181	Hiwot Grmay			KDC member
182	Tesfalem Tewelde	T/adiabo		Crop DA
183	G/ezgiher Abraha	T/adiabo		KDC member
184	Yemane G/ezgiher	T/adiabo		KDC member
185	Haleka G/michael Mesele	K/humera		KDC member
186	Efream Selemon	K/humera		Irrigation DA
187	Almaz G/michael	K/humera		Livestock DA
188	Adane Haile	K/humera		N/R DA
189	Awot Fisiha	K/humera		Irrigation DA
190	Kifle Birhane	Tsegedie		Crop DA
191	Yirga Fitsum	Tsegedie		NRM DA