The Federal Democratic Republic of Ethiopia

Rural Capacity Building Project

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

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EXECUTIVE SUMMARY

The Rural Capacity Building Project (RCBP) is a major investment in Ethiopia’s agricultural sector. The Project is organized into four components:

Component 1. Technical and Vocational Education and Training for Agriculture - (US$30 Million) The project would finance recurrent expenditure; civil works for upgrading and maintenance of existing vocational colleges and construction of new buildings at existing colleges; procurement of goods and services; and long-term and short-term training to upgrade skills of teaching staff of these colleges.

Component 2. Agricultural Advisory Services at Farmers Training Centers- (US $55 Million) The project would finance recurrent expenditure, civil works for upgrading and maintenance of existing farmer training centers and construction of new centers; procurement of goods and services; and long-term and short-term training to upgrade skills of extension staff at these centers.

Component 3. Agricultural Research - (US$ 10 Million) The project would finance recurrent expenditure, civil works for upgrading and maintenance of existing federal and regional research centers; procurement of goods and services; and long-term and short-term training to upgrade skills of federal and regional research staff.

Component 4. Institutional Capacity Building – (US$ 5 Million) The project would finance training programs, study tours, workshops, and would provide technical assistance in the areas of financial administration, governance, procurement, accounts, management information system, and monitoring and evaluation. This project would also finance training and assistance to increase the capacity of cooperatives, farmers’ organizations and local communities to effectively manage farmers training centers and in contracting and evaluating the performance of development agents.

In order to proceed with clearance of the project by the World Bank, the Government of Ethiopia is required to prepare an Environmental and Social Management Framework (ESMF) consistent with World Bank’s Safeguard Policies. The objective of the ESMF is to establish a mechanism to determine and assess potential environmental and social impacts of the project and then to set out measures to avoid, minimize, mitigate and monitor these impacts during implementation and operation of the project activities so as to eliminate adverse environmental or social impacts, offset them, or reduce them to acceptable levels.

In compliance with international standards and practices, the Government of Ethiopia presents this Environmental and Social Management Framework which will be used to guide environmental management of the project. The World Bank’s Operational Policies OP 4.01 - Environmental Assessment and OP 4.12 - Involuntary Resettlement are the policies that are triggered by the project. A Resettlement Policy Framework (RPF) is also submitted as a separate document in conjunction with this report, in order to address potential land acquisition within the project.

The ESMF provides background information on the environmental and social context for the project, and summarizes the relevant laws, policies and administrative structures that may affect the project. The report then provides an overview of the environmental issues in the country, and related gender and HIV/AIDS issues. An analysis of the major options to the project is presented. This is followed by an assessment of the potential environmental and social impacts of the project. Table 9 provides a matrix of the potential effects of the project. No major, unmitigable impacts are anticipated. A list of the key social and environmental concerns is provided, which includes:

Key Social Concerns

* Future expansion of some TVETs and potential displacement of existing land uses
* Participation of farmers
* TVET gender issues
* HIV prevention and awareness
* Responsiveness of extension services to women’s and vulnerable group’s needs
- Limitations on equal access to FTC extension services
- Distance for farmers to access the FTC extension services
- Limitations on farmers access to FTC training

Key Environmental Concerns
- Water supply at TVET/ARC facilities
- Waste management at TVET/ARC facilities
- TVET irrigation canals
- TVET construction impacts
- FTCs development site impacts
- Ecosystem and biophysical effects of extension strategies

A list of the potential mitigation measures for each of these concerns and the means of and responsibilities for implementation is provided on Table 10. Two review processes are proposed under the ESMF: an Environmental Review Process, and a FTC Operations Review Process. The environmental and social impact mitigation and management process (Figure 1) will include:
  a) identifying any adverse impacts of the project activities;
  b) incorporating mitigation measures into construction and operational phases of the project activities implementation plans and documents;
  c) reviewing and clearance of the project activities to proceed, subject to any necessary mitigation; and
  d) monitoring and reporting on project impacts and mitigation effectiveness.

The FTC review process (Figure 2) will include:
  a) operating FTCs in a manner that is environmentally and socially responsible and farmer-based (demand driven);
  b) identifying farmer needs, particularly taking into account extension packages aimed at women and the poor and marginal farmers;
  c) reviewing the performance of ongoing extension assistance and impacts on client groups served by the DAs;
  d) developing an FTC service plan of action which will guide extension services in the future, including opportunities to address particular priorities and sustainable agriculture issues in the local area; and
  e) reviewing and authorizing the plan and allocating the funding in accordance with the plan.

The process for TVET/ARC and FTC Environmental and Social Impact Screening is implemented through Annex 1 - Form A and Annex 2 - Form B. An Environmental Assessment (EA) may be required where the screening process identifies occurrences of significant adverse biophysical or socio-cultural impacts. The proposed criteria and terms of reference for EAs and Environmental Mitigation Plans (EMPs) are presented.

The process for FTC operations review focuses on developing and operating the Farmers Training Centers in a manner consistent with Environmental and Social Impact Screening Form B (Annex 2) and participatory preparation of an annual FTC Service Plan (Annex 3) which is to guide the services of Development Agents based on farmer participation.

Institutional arrangements are proposed for managing the review processes. These give a lead role for the Environmental Protection Agency Regional offices and for staff of Regional Bureaus of Agriculture. A targeted program of capacity development and logistical support is proposed to provide the resources and skills to implement the ESMF.

A Monitoring Plan with preliminary environmental and social indicators is presented to guide the monitoring of ESMF. A Consultation Plan is also presented to assist participation of stakeholders.
Table of Contents

1. Introduction ..................................... 1
2. Project Description ..................................... 2
3. Methodology and Consultation ..................................... 5
4. Baseline Information ..................................... 6
   4.1 Physiography ..................................... 6
   4.2 Agro-ecological Zones ..................................... 7
   4.3 Land Resources ..................................... 8
      4.3.1 Forest Resources ..................................... 8
      4.3.2 Livestock and Rangelands ..................................... 9
   4.4 Water Resources ..................................... 10
   4.5 Agricultural Profile ..................................... 11
      4.5.1 Staple crops........................................ 13
      4.5.2 Cash Crops........................................ 13
   4.6 Population .................................... 14
   4.7 Ethnic Groups .................................... 15
   4.8 Education .................................... 15
   4.9 Health .................................... 15
   4.10 HIV/AIDS........................................ 16
5. Laws, Policies and Administrative Framework .................................... 16
   5.1 Ethiopia Environmental Assessment Requirements .................................... 16
   5.1.1 Ethiopia's Policy and Legal Framework for the Environment and Agriculture .... 18
   5.1.2 WB Safeguard Policies and Triggers ..................................... 22
   5.2 Administrative Framework for the Environment and for Agriculture 25
6. Assessment of Potential Environmental and Social Impacts .................................... 27
   6.1 Overview of Environmental Issues ..................................... 27
      6.1.1 HIV – Food Security Relationships ..................................... 30
      6.1.2 Gender and the Environment ..................................... 31
   6.2 Analysis of Alternatives ..................................... 33
   6.3 Beneficial Impacts of the Project ..................................... 34
      6.3.1 Environmental Benefits ..................................... 34
      6.3.2 Socio-economic Benefits ..................................... 35
   6.4 Analysis of Potential Impacts ..................................... 35
      6.4.1 Scoping of Impacts ..................................... 38
      6.4.2 Key Social Concerns ..................................... 38
      6.4.3 Key Environmental Concerns ..................................... 40
7. Environmental and Social Mitigation and Management Process .................................... 41
   7.1 Processes for Review and Clearance of Project Activities ..................................... 41
      7.1.1 Environmental Review Process ..................................... 42
      7.1.2 FTC Operations Review Process ..................................... 42
   7.2 Environmental and Social Impact Screening, Assessment and Mitigation ..................................... 43
      7.2.1 Facilities Development, Screening and Clearance ..................................... 43
      7.2.2 Criteria and Terms of Reference for Environmental Assessments ..................................... 48
   7.3 FTC Operations ..................................... 50
      7.3.1 Farmer Consultations ..................................... 51
      7.3.2 Service Plan Preparation and Authorization ..................................... 51
8. Institutional Arrangements for ESMF Implementation
   8.1 Overall Framework
   8.2 Roles and Responsibilities
   8.3 Capacity Development Requirements for the ESMF Process
9. Monitoring Plan
   9.1 Monitoring Tasks and Indicators
   9.2 Monitoring Responsibilities and Reporting
10. Consultation Plan
    10.1 TVET/ARC Consultations
    10.2 FTC Consultations
    10.3 Public Disclosure of Project Documents

LIST OF FIGURES
Figure 1: Environmental Review Process
Figure 2: Farmer Training Centers Operations Review Process
Figure 3: Conceptual Outline of ESMF Implementation

LIST OF TABLES
Table 1: Summary of Rural Capacity Building Project Civil Works
Table 2: Distribution of land use types
Table 3: Number and Ownership of Livestock 1984
Table 4: Population of Livestock, 1987/88 and 1994/95
Table 5: Agricultural Land Use and Classes
Table 6: Population Characteristics
Table 7: The World Bank Safeguard Policies
Table 8: Analysis of Alternatives
Table 9: Preliminary Matrix of Indicative Environmental and Social Impacts
Table 10: Outline of Potential RCBP Mitigation Measures
Table 11: Summary of Estimated ESMF/RPF Capacity Development and Process Costs
Table 12: Preliminary Environmental and Social Indicators
Table 13: Consultation Commitments

APPENDIX 1: List of Contacts

Annex 1: Form A – TVET and ARC Environmental and Social Impact Screening
Annex 2: Form B - FTC Environmental and Social Impact Screening
Annex 3: Format for FTC Extension Service Plan
1. Introduction

The Government of Ethiopia has requested World Bank support for the Rural Capacity Building Project (RCBP). The proposed project will complete the development/expansion of 25 agricultural TVET colleges, train or retrain 45,000 extension development agents and establish an estimated 15,000 community-based Farmers Training Centers (FTCs) throughout Ethiopia. The focus of the project is on training of Development Agents (DAs) and on establishing FTCs at the Kebeles (village level), where the DAs will provide training and extension services to farmers.

In order to proceed with clearance of the project, the government is required to prepare an Environmental and Social Management Framework (ESMF) consistent with World Bank Safeguard Policies. The objective of the ESMF is:

"to establish a mechanism to determine and assess potential environmental and social impacts of the and sub-components to be financed under the project, and then to set out avoidance, minimization, mitigation, monitoring and institutional (both formal and informal) measures to be taken during implementation and operation of project activities to eliminate adverse environmental or social impacts, offset them, or reduce them to acceptable levels."

In compliance with international standards and practices, the Government of Ethiopia presents this Environmental and Social Management Framework which will be used to guide environmental management of the project. The World Bank’s Operational Policy (OP) 4.01 furthermore requires that the ESMF report be disclosed as a separate and stand alone document by the Government of Ethiopia and the World Bank, as a condition for Bank Appraisal of the RCBP. The disclosure will be both in Ethiopia where it can be accessible by the general public (including regional and local levels) as well as at the Infoshop at the World Bank, preceding the date for appraisal of the project.

The RCPB has been screened and assigned to Category B by the World Bank’s Environmental Assessment (EA) process. Category B projects are considered likely to have potential for some adverse environmental impacts on human populations or environmentally important. These impacts are site specific; few if any of them are irreversible, and in most cases mitigation measures can be readily designed. In accordance with this classification, the ESMF examines the potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and to improve environmental performance.
2. Project Description

Component 1. Technical and Vocational Education and Training for Agriculture - (US$30 Million) The project would finance recurrent expenditure; civil works for upgrading and maintenance of existing vocational colleges and construction of new buildings at existing colleges; procurement of goods and services; and long-term and short-term training to upgrade skills of teaching staff of these colleges.

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The ESMF addresses the following aspects of environmental and social concern of the project:

TVET Training for DAs
- Curriculum for DA training, including environmental/social issues.

TVET/ARC Civil Works
- Buildings, and related services, including dormitories, cafeterias, classrooms, libraries, bakeries, staff residences, service quarters, etc.
- Farm structures for livestock
- Access roads within the TVET college boundaries and some upgrading of roads to the colleges
- Irrigation canals and rehabilitation of others
- Land acquisition in conjunction with civil works, where additional lands are needed at some of the colleges, yet to be defined
- ARC Civil works to be determined (depends on the extent to which the existing ART Project completes all work)

FTC Civil Works
- Accommodation for 3 Development Agents and classrooms/workshops at the approximately 15,000 locations (1000 FTCs have reportedly been established)

FTC Training and Extension Services
- Recurrent expenditures for farmer training and extension services, including on-farm trials and agricultural demonstrations.

The TVETs have commenced training and re-training of Development Agents. The curriculum has been reviewed and includes a range of courses on participatory methods, environmental/natural
recourse management, gender issues and HIV/AIDS. The ESMF addresses this training and the civil works (re)development of TVET/ARCs, as well as the development and operations of the FTCs.

Table 1 summarizes the available data on project civil works. These data are based on the projected 2003/04 – 2006/07 activity/procurement costs prepared by Ministry of Agriculture. They do not include the substantial works already completed under the program. The construction work started in 2001/02 and has been delayed, so the estimates of works on Table 1 do not include incomplete works that were scheduled for completion in earlier years. Two World Bank Operational Policies may be triggered, depending on works/site circumstances, as identified in relation the project activities. The project’s civil works that will have the widest impact will be the projected 15,000 FTCs, albeit on a relatively small scale at each site.

The TVETs involved in the project include four federal colleges and 21 regional colleges. The average regional college has a campus of about 20 ha. Future land requirements remain to be defined. Many components of the Project investments have been reasonably well defined, although others remain at the conceptual stage. The Government of Ethiopia has demonstrated a strong commitment to decentralising agricultural extension and has, to November 2003, committed 634.5 million Birr (USD 73.7 million) including an approved payment of 367.8 million Birr (USD 42.7 million) to TVET colleges construction and upgrading.1 Substantive work therefore has commenced.

The RCBP represents a major shift and expansion in agricultural extension. In order to ensure effective extension training and services, the project supports institutional capacity development at the most decentralized levels possible – the regional level in the case of TVETs and the Kebele (village) level in the case of FTCs. The new initiative endeavours to establish a renewed trust and support system with farmers in agricultural extension. There are some signs of promise in the successes of extension programs in Amhara and Oromiya regions. By using fertilizers and improved varieties of seeds, farmers have substantially increased crop yields and household income.2 Farmers in drought-prone areas of Tigray region have achieved rates of return as high as 25 percent from modest investment in stone terraces and related soil and water conservation measures. The RCBP initiative for agricultural growth complements the government’s commitment to sustainable land and water management.

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Table 1: Summary of Rural Capacity Building Project Civil Works

<table>
<thead>
<tr>
<th>Activity</th>
<th>Ardaita College</th>
<th>Agarfa College</th>
<th>Alagie College</th>
<th>Bekoji College</th>
<th>World Bank Operational Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land area</td>
<td>2000 ha</td>
<td>n.d.</td>
<td>4200 ha</td>
<td>n.d.</td>
<td>21 total safeguards triggered</td>
</tr>
<tr>
<td>Civil Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TVET New</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Residence</td>
<td>50 m²</td>
<td>50 m²</td>
<td>50 m²</td>
<td>38 units</td>
<td></td>
</tr>
<tr>
<td>Guest House</td>
<td>10 m²</td>
<td>10 m²</td>
<td>10 m²</td>
<td>70 m²</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>150 m²</td>
<td>100 m²</td>
<td>105 m²</td>
<td>105 m²</td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab Bldgs</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>21 units</td>
<td></td>
</tr>
<tr>
<td>Cafeteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Lounge</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>19 units</td>
<td></td>
</tr>
<tr>
<td>Staff Lounge</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>20 units</td>
<td></td>
</tr>
<tr>
<td>Sport Field</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>20 units</td>
<td></td>
</tr>
<tr>
<td>Multi Purp Store</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>15 units</td>
<td></td>
</tr>
<tr>
<td>Irrigation Canal</td>
<td>1 km</td>
<td></td>
<td>20 km</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy (100 m²)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>18 units</td>
<td></td>
</tr>
<tr>
<td>Beef (100 m²)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>18 units</td>
<td></td>
</tr>
<tr>
<td>Sheep (100 m²)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>18 units</td>
<td></td>
</tr>
<tr>
<td>Poultry (100 m²)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>18 units</td>
<td></td>
</tr>
<tr>
<td>TVET Upgrading</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Buildings rehab.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road rehabilitation</td>
<td>27 km</td>
<td>20 km</td>
<td>40 km</td>
<td>40 km</td>
<td></td>
</tr>
<tr>
<td>Irrigation Canals</td>
<td>minor</td>
<td>15 km</td>
<td>{15 km}³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abattoir rehab.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTCs Buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project proposes to construct new FTCs and to upgrade existing rural development centers. About 15,000 FTCs will be established involving small buildings with staff quarters and classrooms/workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP 4.01 Environmental Assessment</td>
</tr>
<tr>
<td>Research Centers</td>
<td>Some civil works may be required; to be determined</td>
<td></td>
<td></td>
<td></td>
<td>OP 4.12 Involuntary Settlement</td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Additional expansion of some TVETs may be required. Locations and areas to be determined</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Sources: Ministry of Agriculture TVET project estimates of proposed facilities 2000/04 - 2006/07

³ Civil works noted but no costs included
3. Methodology and Consultation

The ESMF was conducted by the consultants using the following approach:


- A three week visit in Ethiopia during which discussions were held with the Management of the Project Coordinating Unit at the Ministry of Agriculture and Officials at the National Environmental Protection Authority. A field visit was conducted in the Regional State of Tigray, where discussions were held with the Tigray Bureau of Agriculture Officials, in particular with one of the training and extension expert, the managerial staff at the Tigray Agricultural Research Institute in Mekelle, the Agricultural and Natural Resources Office in Wukro and with the management and staff at the TVET Colleges at Wukro and Alage. These discussions were followed by site visits to Farmer Training Centers, and villages where further consultations were conducted with farmers, village chiefs, DAs and women’s groups (in the village of Abreha Atsibeha). A general assessment was made, based on the specific circumstances of the sites visited, regarding the capacity to implement the proposed screening mechanism. Discussions were also held regarding the appropriate training and capacity building needs.

- The discussions with the villagers and the government officials were very insightful and provided the basis for the measures and designs comprised in this ESMF.

- During the discussion with the Regional staff and the Project Coordination Unit, scope and relevance of existing environmental requirements at the national level was discussed and mutually agreed conclusions were drawn.

- The regional discussions and field visits took the form of the consultants and the Regional Bureau of Agriculture Training and Extension Expert arriving at pre-arranged meetings at the sites described above.
The ESMF draft report was then prepared based on the data collected, discussions and consultations described above.

Consultation took place with Ministry of Agriculture Project Coordination Unit staff, Extension Department staff and EPA staff to present and discuss the preliminary findings and draft report. Revisions were made on the ESMF on the basis of these final consultations.

4. Baseline Information

4.1 Physiography

Ethiopia has highly diverse topography with elevations ranging dozens of mountains with an altitude over 4600 meters above sea level, to the Afar depression at about 110 meters below sea level. The land area of the country is 1,098,000 sq. kilometres and much of it consists of high plateaus and mountains dissected by a number of streams feeding larger rivers, such as the Abay (Blue Nile). Since the country is located within the tropics, physical conditions and variations in altitude have resulted in great diversity of climate, soil and vegetation. The capital of Ethiopia, Addis Ababa is located in the centre of the country on the edge of the central plateau.

The highlands are often referred to as the Ethiopian Plateau and divide the country into the northern and the southern parts. The Great Rift Valley bisects the plateau and divides it into the northwestern highlands and the southeastern highlands, each with associated lowlands. The northwestern highlands are more wide-ranging and rugged and are divided into northern and southern sections by the valley of Abay.

The plateau north of Addis Ababa consists of high mountains, mountain ranges and deep chasms, which have created a variety of physiography, climate and indigenous vegetation. The plateau southwest of Addis Ababa is also rugged, but has a lower elevation than in its northern section. The terrain of the Great Rift Valley creates a third physiographic region of the country. This extensive fault system ranges from the Jordan Valley in the Middle East to the Zambezi River’s shire tributary in Mozambique. The Denakil Depression and the coastal lowlands are marking this segment in the north and in the south the Great Rift Valley turns into a deep trench slicing through the plateau from north to south with a width average of 50 kilometres. The southern part of the valley consists of a chain of comparatively large lakes, some with fresh water and others containing salts and minerals.

The range of small volcanoes, hot springs and number of deep gorges indicate that large segments of the landmass in Ethiopia are geologically unstable. Small earthquakes have been recorded along the length of Eritrea and the Denakil Depression in modern times.
The rivers in the country originate from the highlands and flow down the deep gorges in many directions. The Blue Nile is the country's largest river and many of the other large rivers tributaries to the Nile system due to the general westward slope of the highlands. The Blue Nile, the Tekezé and the Baro are among the ones that account for half of the country's water outflow. The Awash River flows in the northern half of the Great Rift Valley and has several dams, build by the previous regime, which generate power and irrigate major commercial plantations. The south east is drained by the Genale and Shebele and their tributaries, while the south west is drained by the Omo.

4.2 Agro-ecological Zones

The climate conditions in is mainly determined by altitude. The mean temperature in the highlands is 16 C and in the lowland 31 C. There are two rainy seasons, the so called small rains March-April and the main rainy season from June to September. Ethiopia can be divided into three environmental zones; cool zones (Wurch and Dega), temperate (Woyna-Dega) and the hot (Kolla and Harror).

The cool zone consists of the central parts of western and eastern sections of the north western plateau and a minor part around Harer. The altitude in the cool zone is generally above 2500 meters. March to April are the warmest months and the average daily temperature ranges form close to zero to 16 C. Throughout most months of the year light frost occur at night and the highest altitudes have snow. The temperate zone consists of the lower areas of the plateau, ranging from 1500 to 2500 metres in elevation. The daily average temperature is 16-30 C.

The hot zone comprises the area with an elevation of less than 1500 meters. The Denakil Depression, the eastern Ogaden, the deep tropical valleys of the Blue Nile and Tekezé rivers and the areas along the Kenyan and Sudanese borders. The average annual temperature is about 27 C, but reaches up to 50 C in some areas. The humidity is very high in the tropical areas and daily temperatures vary more widely here than in the other two regions.

Of the total area of Ethiopia, only 15 percent is cultivated land, 51 percent is permanent pasture rangelands and 12 percent comprises forests and shrubs. The unutilised areas are approximately 17 percent of the country's total land area of 113 million hectares.\footnote{EPA State of the Environment report for Ethiopia, (1986 data), 2003, page 27}
4.3 Land Resources

Ethiopia has a total land area of 113,000,000 hectares. The following table illustrates the general land cover types in Ethiopia and Eritrea.

<table>
<thead>
<tr>
<th>Type of land use</th>
<th>Area in hectares</th>
<th>Percentage of total country area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensively cultivated land</td>
<td>12,596,900</td>
<td>10.3</td>
</tr>
<tr>
<td>Moderately cultivated land</td>
<td>15,287,500</td>
<td>12.5</td>
</tr>
<tr>
<td>Afro alpine (too cold for cultivation)</td>
<td>244,600</td>
<td>0.2</td>
</tr>
<tr>
<td>High forest</td>
<td>5,381,200</td>
<td>4.4</td>
</tr>
<tr>
<td>Woodland</td>
<td>3,057,500</td>
<td>2.5</td>
</tr>
<tr>
<td>Riparian woodland and shrubland</td>
<td>733,800</td>
<td>0.5</td>
</tr>
<tr>
<td>Bushland and shrubland</td>
<td>26,172,200</td>
<td>21.4</td>
</tr>
<tr>
<td>Grassland</td>
<td>37,301,500</td>
<td>30.5</td>
</tr>
<tr>
<td>Water bodies</td>
<td>611,500</td>
<td>0.5</td>
</tr>
<tr>
<td>Others</td>
<td>20,913,300</td>
<td>17.1</td>
</tr>
<tr>
<td>Total</td>
<td>122,300,000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Ethiopian Mapping Authority 1988, published by EPA 1997, above figures include Eritrea

Despite a huge arable land potential of 55 million hectares, or approximately 50% of the land mass, only 14.8% of the land mass is being utilized for crop cultivation.

Ethiopia has an estimated 10 million hectares of land potentially suited to irrigation, more than half of which is in the Abbay River basin.

4.3.1 Forest Resources

Ethiopia relies on its natural forest resources to supply its needs of wood for construction, industry and fuel. Plantation forestry is increasing in importance. Many studies state that the closed forest in Ethiopia covered 40 percent of the country only one century ago however the accuracy of this number has been questioned. Deforestation accelerated in the beginning of this century and in 1960 closed forest covered only approximately 3.4 percent of Ethiopia.

Forest and woodland provide for various needs. Except for wood, the many other useful products, such as incense, myrrh and gums, grazing for livestock and foraging for honey bees. According to the Ethiopian Forestry Action Programme (1993) the production and use of industrial wood products in Ethiopia is one of the lowest in the world. This does not signify that wood is not used, but reflects the

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5 Ibid., p. 7
6 Ibid. p. 7
7 Conservation Strategy of Ethiopia, Volume I, Environmental Protection Authority, 1997, page 42
8 Ibid., page 42
9 Ibid., page 42
fact that the bulk of the cutting and using of wood is largely done by the artisanal sector, and not by the industrial sector.

4.3.2 Livestock and Rangelands

Ethiopia has the largest livestock population in Africa. There are more than 35 million cattle and 40 million small ruminants. Livestock plays an essential role in the Ethiopian economy. Estimates for 1987 show that livestock production contributed to nearly 15 percent of the GDP. This puts enormous pressure on the available rangelands, particularly in the highland area (over 1500 meters) where 15 percent of the livestock are located.

Table 3: Number and Ownership of Livestock 1984

<table>
<thead>
<tr>
<th>Type</th>
<th>Cultivators</th>
<th>Pastoralists</th>
<th>Total million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>17.4</td>
<td>4.4</td>
<td>21.8</td>
</tr>
<tr>
<td>Sheep</td>
<td>1.5</td>
<td>0.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Goats</td>
<td>0.4</td>
<td>0.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Equines</td>
<td>3.4</td>
<td>0.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Camels</td>
<td>0.0</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>22.7</td>
<td>100.0</td>
<td>30.6</td>
</tr>
</tbody>
</table>

Source: Ministry of Agricultural (1984), Published by EPA 1997

In 1985 the majority of the livestock were owned by cultivators (74 percent), while pastoralists owned the remaining (26 percent). Livestock are an essential part of almost all farming systems in Ethiopia and is for the most part a subsistence activity. Livestock provides draught power for the grain producing highland farmers and the staple milk for pastoralists. Livestock also provide milk and meat to urban populations. The manure is an important fuel and fertilizer and the sale of manure cakes can provide as much as one-third of cash incomes. Cattle, sheep, goats and camels are managed in a nomadic pastoral system in the arid and semi-arid lowlands, where they form the basis of the economy.

Cattle in Ethiopia are more or less exclusively of the Zebu type and are poor sources of milk and meat. However these types of cattle do well under the traditional production system. Contagious diseases and parasitic infections are the main causes of death and are factors that are exacerbated by malnutrition and starvation. Recurring drought are believed to have a severe impact on the animal population, however no exact data is available in this regard. All animal are range fed and the dry season poses a serious threat to the cattle population. Most of the equines (horses, mules and donkeys) are used for transport or to produce agricultural goods. Camels are essential in the low lands

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10 Ethiopia Rural Development Policy Note, World Bank, page 4
13 Ethiopia Rural Development Policy Note, World Bank, page 4
as pack animals as well as producers of milk and meat for the pastorals. Poultry farming is widely practised in Ethiopia. Almost all rural households keep some poultry for consumption and for cash sale.

<table>
<thead>
<tr>
<th>Type</th>
<th>1987/88 (in millions)</th>
<th>1994/95 (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>30.00</td>
<td>31.99</td>
</tr>
<tr>
<td>Sheep</td>
<td>23.20</td>
<td>27.00</td>
</tr>
<tr>
<td>Goats</td>
<td>17.30</td>
<td>24.00</td>
</tr>
<tr>
<td>Camels</td>
<td>1.05</td>
<td>1.05</td>
</tr>
<tr>
<td>Equines</td>
<td>7.02</td>
<td>7.00</td>
</tr>
<tr>
<td>Chickens</td>
<td>56.60</td>
<td>52.00</td>
</tr>
</tbody>
</table>


Ethiopia has a vast potential for increased livestock production, both for local use and for export. The constraints are many, and include inadequate nutrition, disease, lack of support services (extension), lack of knowledge of adequate means of animal breeding, marketing and processing. The soaring concentration of animals in the highlands together with the tradition of keeping animals for status purposes greatly reduces the potential for Ethiopian livestock production.

4.4 Water Resources

Ethiopia has large water resources potential which includes 11 major lakes with a total area of 7400 sq. km. There are 12 river basins with a total annual run-off of about 10 billion cubic meters. The majority of the rivers are trans-boundary with more than 75 percent of the annual run off draining to neighbouring countries. The water resources in Ethiopia provide a great potential for hydropower generation, irrigation and fisheries. The Abbay (Blue Nile) River basin is by far the largest system, making up over 40% of the total runoff in the country.

Seven of the major of the eight major natural lakes are located in the Rift Valley. These lakes are rich in fish and have more than 25 species, which accounts for 50 percent of the total inland production. Some of the rivers also have a large potential for fisheries development. The most essential commercial types of fish are Tilapia, Nile perch and Cat Fish. The maximum sustainable yield of fish from the major lakes is estimated to be approximately 35,000 tons per year.

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16 National Action Program to Combat Desertification, Environmental Protection Authority, 1998, page 4
18 Conservation Strategy of Ethiopia, Volume I, Environmental Protection Authority, 1997, page 53
19 Ibid., page 48
Mineral resources, such as soda ash, are extracted from the lake brine. The Soda ash is used for manufacturing caustic soda, detergents and soaps and the soda ash project at Lake Abijata can produce 20,000 tons per year. The potentially significant impact on the rich fish and bird life has however, not properly assessed\(^2\).

Due to the lack of hydrogeological data, the groundwater potential of the country is not known. A preliminary water resource study of the various basins estimates the groundwater potential to be 2.9 billion cubic meters\(^2\). Currently only a fraction of this resource is in use, primarily for local water supply purposes.

The irrigation and hydroelectric generation potentials of the country are large, however these are not fully utilised. An estimate of the irrigation potential utilised is only 4.6 percent. The same figure for hydroelectric generation potential is only 1.25 percent.\(^2\)

### 4.5 Agricultural Profile

Ethiopia is an agricultural-based economy with more than 85 percent of its population largely depending on the agricultural sector. The sector accounts for 52 percent of GDP and approximately 90 percent of the total exchange earnings. The agricultural sector is dominated by small scale resource poor farmers, who produce 90-95 percent of all cereals and oil seeds and grow 98 percent of the coffee produced in Ethiopia\(^2\). Rural farmers represent 80 percent of the labour force in the country and the estimate of the country’s small holder farms is 10 million. The agricultural output (value added) has the following distribution: 64 percent from crops, 23 percent from livestock and 13 percent from forestry\(^4\). The agriculture in Ethiopia is rain fed. The main export is coffee followed by hides, skins and chat.

<table>
<thead>
<tr>
<th>Land use Class</th>
<th>Description</th>
<th>% of total</th>
</tr>
</thead>
</table>
| Arable land (excluding vertisols) | - dependable growing period ≥ 90 days  
- soils ≥ 250 mm deep  
- surface less than 50% stone cover  
- Slope less than 30% | 27% |
| Vestisols | - all areas predominantly covered by heavy black clay soils | 6% |
| Steep land | - all land ≥ 30% slope  
- all other factors as for arable land | 5% |

\(^{20}\) The Conservation Strategy of Ethiopia, Volume I, Environmental Protection Authority, 1997, page 47
\(^{21}\) Conservation Strategy of Ethiopia, Volume I, Environmental Protection Authority, 1997, page 49
\(^{22}\) Conservation Strategy of Ethiopia, Volume I, Environmental Protection Authority, 1997, page 50
The vast majority of agricultural producers are subsistence farmers, with small holdings, that live on the highlands (between 1500 and 3000 meters). The population in the lowlands (below 1500 meters) are nomadic and primarily engaged in livestock raising. Livestock management is dominated by customary systems. Approximately 71 percent of households own oxen as one of their main assets.

Area cultivated per family has been declining with time due to lack of cultivable land and a fast growing population. Only one fifth of rural household report that their current holding of land allows them to achieve food self sufficiency. It is estimated that around 37 percent of farmers use inorganic fertilizer, usually bought on credit. Improved seed, mostly maize and wheat, are used by around 13 percent of the farmers.

The soil in Ethiopia’s highland is largely of two different types. The first one is the red-brown clayey loam that holds moisture and is well equipped with most of the necessary minerals and the second one has a brown grey to black soil colour and is high on clay content. These soils are both found in the northern and southern highlands in areas with poor drainage. They are sticky when wet, solid when dry and generally hard to work. This type of soil however has excellent potential for agricultural production with appropriate drainage and conditioning.

The arid lowlands are covered with sandy desert soils and because of the limited exposure to rain these soils have restricted agricultural potential. There are pockets in some areas where the rainfall is sufficient and the nomadic pastorals move with their livestock to pursue the availability of pasture.

Soil erosion is one of the country’s major problems. It has been estimated that 1.5 – 1.9 billion tonnes of soil are lost annually, 45 percent of which occurs on crop farmlands and 21 percent on overgrazed rangelands. Centuries of deforestation, overgrazing and cultivation on slopes not fit for agriculture have eroded the soil. No conservation methods have been practised in the traditional farming measures in Ethiopia and as a result, accelerated the soil erosion in much of Ethiopia’s highland.

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25 World Bank Rural Development Policy Note on Ethiopia, page 6
Water shortages and infestations of disease causing insects, primarily mosquitoes, have prevented the use of large parts of potentially productive land. Malaria is prevalent in large parts of the country.

4.5.1 Staple crops
Grain production is mainly cereals (83 percent), pulses (12 percent) and oilseeds (5 percent). Ethiopia's principal grains are teff, wheat, barley, corn, sorghum and millet. Teff, wheat and barley are produced in cool-weather, generally at altitudes above 1500 meters. Teff, the indigenous crop of Ethiopia is used for the traditional injera bread. Barley is used for food and for the production of tella, a locally produced beer. Sorghum, millet and corn are cultivated at lower altitudes in warmer climate, mostly in the country's western, south western and in some of the eastern parts. Sorgum and millet are drought resistant and grow where in areas less dependant on rain. Corn requires large amounts of rainfall to produce a good harvest and is found on higher elevations (2000-3500 meters). Sorghum, millet and corn are the three grain types that represent the staple food for a large part of the population and are of main importance in the diet of the nomads.

Pulses are the main protein source and constitute the second most important element in the national diet. Pulses grow widely at all elevation in the country. Oil seed cultivation is another important agricultural activity. The most common oils seeds are niger seed, flaxseed and sesame. Most oil seeds are produced by small scale farmers, however sesame was grown by large scale commercial framers before the land reform took place.

Ensete, the “false banana” is an essential food source in the southern and south-western parts of Ethiopia. The ensete plant produces large quantities of starch and ensete flour constitutes the staple food of local people in these regions. Taro, yams and sweet potatoes are other staples usually grown in the same areas as ensete.

Ethiopia's population growth and severe drought have resulted in a food deficit that has been covered through food aid. Between 1984/85 the country received 1.7 million tons of grain, which represented 14 percent of the total food aid for Africa.

4.5.2 Cash Crops
As described above, 64 percent of the agricultural outputs come from crops. The most important cash crop in Ethiopia is coffee. During the 1970s coffee exports accounted for 50-60 percent of the total value of exports. The remaining two percent was produced by state farms. Nearly all the coffee in Ethiopia was produced by farmers on small holding of less than one hectare. The Ethiopian coffee is

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28 World Bank Rural Development Policy Note on Ethiopia, page 6
of the Arabica type and grows wild in many parts of the country, although most of it is produced in the southern and western regions of the country.

Cotton is grown all over the country below the altitudes of 1400 meters. Most of the lowlands do not supply adequate rainfall and many of the cotton cultivations depend on irrigation, which are found around the Awash Valley area where the large irrigated state farms are located.

4.6 Population

One of the most striking demographic features of Ethiopia is the rapid growth in population, the high fertility and the mortality rates. The estimated annual growth rate is 2.8 percent per year and the current population of Ethiopia is approximately 67 million. Today, Ethiopia is the second most populous nation in sub Saharan Africa. The Central Statistical Authority (CSA) is projecting that the population will reach 73 million by the year 2005. Around 80 percent of the population of Ethiopia is estimated to live rural areas.

The infant mortality rate was 97 per 1000 live births in 2000. Total fertility is estimated at 7.7 per women between the years 1990-2000. Ethiopia had a life expectancy at birth of 52 years for both men and women in 2000. The life expectancy rate is expected to decline to 47-49 for both sexes the coming years because of AIDS. The Government of Ethiopia launched a National Population Policy in 1993 with an objective to maintain a balance between the population growth and the country’s resource base.

The majority of the population live in the highlands and are mainly farmers, while the lowlands are mostly populated by pastoralists. The pastoralists occupy 60 percent of the land and constitutes of approximately 12 percent of the total population of the country. The population density of 45 people per sq. km is considered low by the CSA, but is distributed evenly over the country. The table below illustrates the uneven population age distribution of the population with 48 percent in the age group 0-14 years.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>51</td>
<td>49</td>
<td>18.6</td>
</tr>
<tr>
<td>5-9</td>
<td>53</td>
<td>47</td>
<td>17.9</td>
</tr>
<tr>
<td>10-14</td>
<td>53</td>
<td>47</td>
<td>11.7</td>
</tr>
<tr>
<td>15-19</td>
<td>51</td>
<td>49</td>
<td>8.1</td>
</tr>
<tr>
<td>20-24</td>
<td>47</td>
<td>53</td>
<td>6.1</td>
</tr>
<tr>
<td>25-29</td>
<td>43</td>
<td>57</td>
<td>6.1</td>
</tr>
</tbody>
</table>

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Only approximately 28 percent of the population have access to potable water. Average per capita water consumption has been estimated to 20 litres per day, but falling as low as 6 litres per day in areas where water has to be carried considerable distances. The carrying of water and firewood is done mainly by women. Sanitation facilities are few and only 52 percent of the urban population outside of Addis Ababa and 69 percent in Addis Ababa had sanitation facilities in 1992.

### 4.7 Ethnic Groups

Ethiopia is highly ethnic diverse with 83 languages and 200 dialects spoken in the country. The largest ethnic group is the Oromo. The Amharas are the second largest ethnic group followed by Tigrayans. Other major tribal groups are the Gurage, the Harari, the Somali, the Afar and the Sidama. Amharic is the national and official language of Ethiopia and it is spoken by approximately 12 million people. Where previously Amharic (the language of the historically dominant ethnic group) was compulsory in schools, the regions are now allowed to teach in their own ethnic languages. Christianity and Islam are the main religions in the country, 51 percent are Orthodox Christians, 33 percent Muslims, 10 percent Protestants and the remaining follow other faiths.

### 4.8 Education

The illiteracy rate is 74 per cent (54 percent for men and 75 percent for women). Statistical data from the Ministry of Education show that a large number of children do not have access to education. The Gross Enrolment Ratio (GER) for the year 1999/2000 was 57.4 per cent, i.e. almost 43 per cent were not in school. The difference between the regions in Ethiopia is significant. In Addis Ababa 50 percent of the students were women, while the same number for SNNPRA was 31 and for Afar 35. Only 24.4 percent were women among the students to enter colleges at diploma level in the academic year 1999/2000 and at the degree programmes (of various higher education institutes) the percentage for women students was as low as 13.3.

### 4.9 Health

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32 Country Gender Profile Ethiopia, Sida, May 2002, page 17 (From MoA 2000)
Significant progress in health and social services have been made since the 1970s, however the 1994 health service coverage still remained exceedingly low. In 1990, there was one medical doctor for 30,000 people, 1 nurse for 14,000 people and 1 health assistance for 5,000 people. The health care delivery system in Ethiopia is seriously constrained by several factors, such as unbalanced geographical distribution of health services, under funding of health facilities, lack of equipment and maintenance, shortages of drugs and transport services and the lack of health information and awareness raising regarding infectious diseases such as HIV/AIDS.

4.10 HIV/AIDS

The current rate of HIV prevalence in Ethiopia is estimated at over 11 percent. More than 2.6 million Ethiopians are currently infected with HIV and 1.1 million are living with AIDS. In urban areas HIV prevalence from 18 percent in low risk groups to 43 percent in the high risk group. The low risk group in the rural areas is estimated to 13 percent. Approximately 90 percent of the reported cases are in the 20-49 age group. The HIV epidemic is considered a generalised epidemic which means that the virus is spreading through the general population and is transmitted through heterosexual contact primarily. A secondary route of transmission is mother to child due to the large number of women infected. The Government of Ethiopia approved an HIV/AIDS policy in 1998 with the overall objective of implementing successful programs to prevent the spread of the virus.

5. Laws, Policies and Administrative Framework

5.1 Ethiopia Environmental Assessment Requirements

The Proclamation on Environmental Impact Assessment (No. 299/2002) was adopted on in December 2002 by the Federal Democratic Republic of Ethiopia. Its General Provision, Article 1, states that:

"Without authorization from the Authority (here Environmental Protection Authority) or from relevant regional environmental agency, no person shall commence implementation of any project that requires environmental impact assessment as determined in a directive issued pursuant to Article 5 of this Proclamation".

Article 5: Project Requiring Environmental Impact Assessment of the Proclamation states that:

"Every project which falls in any category listed in any directive issues pursuant to this Proclamation shall be subject to environmental impact assessment".

"Any directive provided under Sub Article 1 of this Article shall among other things, determine categories of: (a) Projects not likely to have negative impacts and so do not require environmental impact assessment and; (b) Projects likely to have negative impacts and thus require environmental impact assessment"

33 UNDP 1994: Conservation Strategy of Ethiopia, Volume 1, Environmental Protection Authority, 1997, page 77
35 Ethiopia Rural Development Policy Note, World Bank, page 73
36 Ethiopia and HIV/AIDS, USAID Population, Health and Nutrition Programs, and Implementing AIDS Prevention and Care Project (IMPACT), June 1999
Article 5: Environmental Impact Study Report, in Part three of the Proclamation states that:

"An environmental impact study report shall contain sufficient information to enable the Authority or the relevant regional agency to determine whether and under what conditions the project shall proceed."

"An environmental impact study report shall contain, as a minimum, a description of:
the nature of the project, including technology and processed to be used; (b) the content and amount of pollutant that will be released during the implementation as well as operation; (c) source and amount of energy required for operation; (d) information on likely trans-regional impacts; (e) characteristics and duration on all the estimated direct or indirect, positive or negative impacts; (f) measures proposed to eliminate, minimize or mitigate negative impacts; (h) contingency plan, in case of accident and; (i) procedures of self auditing and monitoring during implementation and operation”.

The purpose of the EIA guidelines\textsuperscript{37} is to ensure that any development projects and activities integrate environmental considerations in the planning process as a condition for their approval. The EIA guidelines cover industrial, mining, agriculture and infrastructure development, all of which have a likelihood to impact the environment in a significant manner. The EIA does not require screening of all types of projects. The general parameters relate to size (scale), type (hazardous/toxic) and location (fragile ecosystems) of certain undertakings/operations.

The EIA Guideline Document (May 2000) lists several types of Agricultural projects that may be subject to an EIA. None of the RCBP activities fall within this list. However, the ESMF proposes a screening process that nevertheless ensures a review of all major physical developments within the project.

The EPA recommends the following actions for environmental management within Agriculture:\textsuperscript{38}

- Use of fertilizers: Consideration must be given to the use of both organic and artificial fertilizers, as well as nitrogen fixing plants. Fertilizer use should follow specific guidelines.
- The should be control of seed importation by local authorities to stop the import of plant diseases and pests.
- Ensure that national legal framework, in terms of seed importation and plant spreading, is know to those involved in the project.
- In case of genetically modified organisms, obtainment of a permit.
- Adequate provision of amenities for those relocated and those who move into an area.
- Empowerment of women in all capacities.
- Primary focus should be on the growth of subsistence income for farmers.
- The type of project must ensure the provision of a sustainable income for farmers.

\textsuperscript{37} Environmental Law in Ethiopia, By: Girma Hailu, August 2000, page 39
\textsuperscript{38} EPA, EIA Guideline Document, May 2000, page 27
• Types of land tenure which can promote overgrazing should be considered e.g. communal ownership.
• Provision of adequate veterinary services.
• Proximity to conservation areas may require the creation of buffer zones.
• Local knowledge of animal husbandry should be utilised.
• Due cognisance given to local traditions, taboos and other socio-cultural conditions linked to livestock and nutrition. Projects should avoid agriculture produce which will not be eaten.
• Implementation of special measures to reduce soil erosion e.g. build terraces, cover exposed soil.
• Alternative uses of manure should be investigated
• There should be protection of sites of cultural/historical/ecological importance

5.1.1 Ethiopia’s Policy and Legal Framework for the Environment and Agriculture

The Constitution of Ethiopia

The 1994 Constitution of Ethiopia includes a environmental scope and has defined the environmental values to be preserved and protected. The Constitution under Articles 44 and 92 proclaims that: “all citizens shall have a right to live in a clean a healthy environment” and that the “Government and citizens shall have a duty to protect the environment”.

The Constitution of Ethiopia further includes the following relevant clauses:

(a) Maintains land under the ownership of the Ethiopian people and the government but protects security of usufruct tenure;
(b) Reinforces the devolution of power and local participation in planning, development and decision taking;
(c) Ensures the equality of women with men;
(d) Ensures the appropriate management as well as the protection of the well-being of the environment; and
(e) Maintains an open economic policy.

The Conservation Strategy of Ethiopia

The Conservation Strategy of Ethiopia (CSE) was produced by the Environmental Protection Authority (EPA) in collaboration with the Ministry of Economic Development and Cooperation. Its function is to assess the status and trends in the use and management of natural resources, formulate a policy and to develop an action plan and investment programs including legislative instruments to endorse sustainable development in various sectoral and cross sectoral areas.

39 Environmental Assessment Management Framework for the Pastoral Community Development Project, Federal Republic of Ethiopia, January 2003, page 18
41 Environmental Assessment Management Framework for the Pastoral Community Development Project, Federal Republic of Ethiopia, January 2003, page 18
The Environmental Policy of Ethiopia

The Environmental Policy of Ethiopia (EPE) was approved April 2, 1997 by the Council of Ministers and constitutes the first comprehensive Environmental Policy of the Federal Democratic Republic of Ethiopia. It is based on the policy and strategy findings and the recommendations of the Conservation Strategy of Ethiopia (CSE) mainly from volume II. The Overall Policy Goal is to:

"improve and enhance the health and quality of life of all Ethiopians and to promote sustainable economic development though the sound management use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs".

The Environmental Policy and Social Issues

The Environmental Policy articulates that “Social equity shall be assured particularly in resource use” and further states that:

(a) To ensure that formal and informal training in environmental and resource management include methodologies and tools for analysis and elimination of inequities;
(b) To make environmental awareness and public education programmes include both men and women in all social, economic and cultural grouping of the society;
(c) To subject all policies, programmes and projects to impact assessment in order to maximize equity for economic, ethnic, social, cultural, gender and age groups, especially the social disadvantage;
(d) To facilitate the participation of women across all sections of society in training, public awareness campaigns, formal and informal education and decision making in environment and resource management.

Cross Cutting Sectoral Policies

The National Population Policy was issued in April 1993, and has the following overall objectives: (a) Closing the gap between high population growth and low economic productivity; (b) Expediting economic and social development processes through holistic and integrated development programme; (c) Reducing the rate of urban migration; (d) Raising the economic and social status of women by freeing them from the restrictions and drudgeries of traditional life and making it possible for them to participate productively in the community at large; (d) Significantly improving the social and economic status of all vulnerable groups (women, youth, children and the elderly).

The National Policy on Women was issued in March 1993, and has the following objectives: (a) To ensure and respect women’s rights to equality in every aspect of life; (b) To create an environment
which will enable women to equally initiate ideas and participate in the formulation and implementation of development and economic plans; (c) To eliminate, step by step, centuries old gender based discriminatory attitudes and practices towards women; (d) To ensure the supply of basic services necessary for women as well as for the overall development of society.

Rural Land Tenure

The Constitution of Ethiopia\textsuperscript{45} approved in December 1994, reads that land is retained under the control of the people and the government of Ethiopia, and thus prohibiting its buying and selling. It however ensures its usufruct tenure rights and allows for its usufruct rights to or from others (i.e. rent out the land). All farmers who would like to make a livelihood from farming are entitled to have plot of land free of charge\textsuperscript{46}.

The larger part of land in Ethiopia is used for farming and grazing. Land held by farmers range from 0.5 ha to 4 ha and tends to be of more than one type, i.e. land suitable for cultivation and land suitable grazing. Land use is primarily assured through traditional approaches. Farmland is under the rights of the individuals extending to communal rights over grazing land.

Expropriation Law\textsuperscript{47}

Article 40 of the Constitution of Ethiopia states that “Without the prejudice to the right to private property, the government may expropriate private property for public purposes subject to payment in advance of compensation commensurate to the value of the property”.

The World Bank Policy on Involuntary Resettlement (OP 4.12) will apply for any activities in the Rural Capacity Building Project, as committed to by the Federal Democratic Republic of Ethiopia, through the signing of the contractual arrangements.

Recent Legislation Related to the Environment

- The Proclamation on Environmental Impact Assessment (No. 299/2002) as described above

- The Proclamation on Environmental Pollution Control\textsuperscript{48} (No. 300/2002)

This law recognises the fact that some social and economic development endeavours may inflict environmental harm that could make the endeavours counter productive. To this end, it aims to eliminate or, when not possible to mitigate pollution as an undesired consequence of social and economic development activities.

\textsuperscript{46} Ethiopia: Sustainable Development and Poverty Reduction, Executive Summary, June 2002, page 37
\textsuperscript{47} Resettlement Policy Framework of Ethiopian Social Rehabilitation and Development Fund, 2002, page 11
\textsuperscript{48} The Federal Negarit Gazeta, No. 12, December 2002, page. 1959, Proclamation No. 300/2002
• The Proclamation on the Establishment of Environmental Protection Organs⁴⁹ (No. 295/2002)
  This law is assigning responsibilities to separate organisations for environmental development
  and management activities as well as environmental protection regulations and monitoring as
  instruments for the sustainable use of environmental resources, and thereby avoiding possible
  conflicts of interest and duplication of efforts. It gives the Environmental Protection Agency
  (EPA) the legal powers to ensure enforcement and compliance with environmental laws and
  standards and differentiates the responsibilities among the environmental agencies and federal
  and regional level.

International Environmental Agreements and Conventions:⁵⁰
• The National Action Plan to Combat Desertification⁵¹
  Ethiopia signed the Convention to Combat Desertification in October 1994 followed by the
  Government ratification in June 1997. The Environmental Protection Authority (EPA) was
  designated by the Government as a national focal agency for the implementation of the
  convention. The activities so far have included, among others, the development of National
  Action Plan for the Environment and the regional action programmes are under development.
• The Stockholm Convention on Persistent Organic Pollutants
  Ethiopia accepted the POPs convention in 2002. It is intended to ban certain hazardous
  chemicals, including a specified list of pesticides.
• The Convention on Biological Diversity
  Ethiopia ratified the convention in 1994. The CBD has three goals: (a) conservation of
  biodiversity, (b) sustainable use of components of biodiversity and, (c) fair and equitable
  sharing of benefits.

Other Agreements and Conventions supported by Ethiopia include:
• The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes
• The United Nations Framework Convention on Climate Change
• The Vienna Convention and the Montreal Protocol for the Protection of the Ozone Layer
• The Rotterdam Convention on the Prior Informed Consent Procedure for certain Hazardous
  Chemicals and Pesticides in International Trade

⁵⁰ Environmental Assessment Management Framework for the Pastoral Community Development Project,
  January 2003, page 19
⁵¹ Environmental Protection Authority, March 2001, page 14
5.1.2 WB Safeguard Policies and Triggers

The World Bank has established Safeguard Policies to ensure that projects funded by the Bank international standards with regard to good environmental and social management practices. Table 7 summarizes the Bank’s operational policies related to environmental and social concerns. The World Bank Safeguard policies that the Rural Capacity Building Project may trigger are the Environmental Assessment (OP 4.01) and the Involuntary Resettlement (OP 4.12).

<table>
<thead>
<tr>
<th></th>
<th>The World Bank Safeguard Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Environmental Assessment OP 4.01</td>
</tr>
<tr>
<td>2.</td>
<td>Natural Habitats OP 4.04</td>
</tr>
<tr>
<td>3.</td>
<td>Forests OP 4.37</td>
</tr>
<tr>
<td>4.</td>
<td>Pest Management OP 4.09</td>
</tr>
<tr>
<td>5.</td>
<td>Cultural Property OP 4.11</td>
</tr>
<tr>
<td>6.</td>
<td>Indigenous People OP 4.20</td>
</tr>
</tbody>
</table>
Cultural Property OP 4.11 will not be triggered by the project due to the uncertainty regarding potential for unearthing artefacts. In lieu of this, any concerns regarding the potential excavation of Cultural Properties is addressed in Form A and Form B. International Waterways OP 7.50 will also not be triggered because the small scale irrigation demonstrations will have no effect on downstream water volumes in those upper tributaries of the Blue Nile. There are no Disputed Areas that would trigger OP 7.60.

Environmental Assessment OP 4.01
This policy requires environmental assessment (EA) of projects proposed for the Bank financing to help ensure that they are environmentally sound and sustainable. The EA is a process that depends highly on the nature of the project in question. It analyses the scale and potential environmental impact of the project and its activities. The EA process includes the natural environment (land, water, air); human health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property) as well as transboundary and global environmental aspects.

The environmental and social impacts will stem from the activities under the RCBP. However, since some of the project activities have not been identified before appraisal (e.g. the exact location of the 15,000 FTCs and others) the EA process calls for the GoE to prepare a Environmental and Social Management Framework (ESMF). The ESMF will establish a mechanism to determine and assess future potential environmental and social aspects of the project activities under RCBP, and then set out mitigation, monitoring and institutional measures to be taken during implementation and operation of the project activities to eliminate adverse environmental and social impacts, offset then, or reduce them to acceptable levels.
OP 4.01 further requires that the ESMF must be disclosed as a separate and stand alone document by the GoE and the World Bank as a condition for Bank appraisal of the RCBP. The disclosure should be both in Ethiopia where is can be accessed by the general public and at the Infoshop of the World Bank. The date for disclosure must precede the date for appraisal of the project.

**Involuntary Resettlement OP 4.12**

Significant measures are made in the design and screening stages of the RCBP to avoid impacts on people, land property, including people’s access to natural and other economic resources, to the extent possible. Notwithstanding, land acquisition, compensation and resettlement of people may be inevitable for in some of the components of this project. Social impact of resettlement will be immediate and negative if left unmitigated. Thus, a resettlement framework (RPF) has been prepared as a separate document alongside the ESMF in compliance with OP 4.12. This framework sets out the guidance for resettlement plans that would have to be prepared for any sub components of RCBP that triggers this policy.

This policy would be triggered when a sub component causes the involuntary taking of land and other assets resulting in: (a) relocation or loss of shelter, (b) loss of assets or access to assets, (c) loss of income sources or means of livelihood, whether or not the affected persons must move to another location. The resettlement policy applies to all displaced persons regardless of the total number affected, the severity of the impact and whether or not they have legal title to the land. Particular attention should be paid to the needs or vulnerable groups among those displace. The policy also requires that the implementation of the resettlement plans are a pre-requisite to activity commencement to ensure that displacement or restriction of access does not occur before necessary measures for resettlement and compensation are in place.

For project activities involving land acquisition it is further required that measures include provision of compensation and other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities. In particular, the taking of land and related assets may take place only after compensation has been paid and, where applicable, resettlement sites, new homes, related infrastructure and moving allowances have been provided to displaced persons. For project activities requiring relocation or loss or shelter, the policy further requires that measures to assist the displaced persons are implemented in accordance with a resettlement plan of action. The policy aims to have a fair and transparent process for displaced persons.

The OP 4.12 requires the Resettlement Policy Framework to be disclosed in Ethiopia and at the Bank before appraisal.
5.2 Administrative Framework for the Environment and for Agriculture

National Level Administration

The Proclamation of the Federal Democratic Republic of Ethiopia (No. 1/1996) establishes the state structure. Administratively, the country is divided into Regional states and Woredas. There are 11 Regional States in Ethiopia, these are; Oromia, Afar, Tigray, Amhara, Somali, Benishangul Gumuz, Harari, Gambella, Southern Nations Nationalities and Peoples, Addis Ababa City Administration and Dire Dawa Administrative Council.

The highest legislative and policy making body of the Federal Government is the Council of People's Representatives, accountable to the people of the country. The government executing agencies are the Ministries (Ministry of Agriculture etc.).

The primarily responsibilities of the Ministry of Agriculture (as per Proclamation 4 of 1995) are in these areas; Land Tenure, Crop and Animal Husbandry (with EPA), Land and Water Management (with EPA and MoWR), Land use Policy (with MoWR) and Plant Genetic Resources (with EPA, MoE and Higher Education Institutions).

The main agency responsible for environmental protection at the national level is the Environmental Protection Agency (EPA). The EPA was established as an autonomous institution by the Federal Government in 1995. The mandate of EPA includes the following:

- Prepare and implement environmental policy and laws;
- Institute a system for Environmental Impact Assessment (EIA)
- Set environmental standards;
- Combat desertification;
- Ensure regular action to protect the environment;
- Implement international treaties;
- Provide support to the Regions.

The EPA is supported by a range of ministerial line agencies and institutions concerned with sectoral and cross sectoral policies (water, health, agriculture etc.)

Regional Level Administration

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The Regional States are empowered to establish Bureaus mirroring the ministries of the federal government (Bureau of Agriculture etc.). Regional States have their own Councils of Representatives. The councils are the highest policy making bodies and have the power of issuing laws and executing them through the relevant Bureaus. The common powers and fields of activities of the regional bureaus vary to some extent, but largely include the following:

(a) To prepare and on approval implement plans and budgets;
(b) To ensure the implementation of laws, regulations and directives;
(c) To undertake studies and research, collect and compile statistical data and transmit it to the relevant executive organ;
(d) To enter into contracts in accordance to the law; and
(e) To submit periodic activity reports to the regional executive organ and to the relevant federal executive organ.

Bureau heads are accountable to their regional executive committees with regard to execution of activities, programmes and laws pertaining to their respective sectors.

The mandate and responsibilities of the Bureau of Agriculture are to encourage expansion of agricultural development and land use in the region in accordance with national policies. They are furthermore responsible for the provision of agricultural extension services to farmers and to implement the environmental policies.

The Bureau of Planning and Economic Development is responsible for the monitoring of the overall implementation of the regional strategy, action plan and investment programme for natural resources and the environment.

The basic administrative/political unit is the Woreda, which have, in large, an identical structure in miniature to the Regional States. The offices (branches of the respective Bureaus) are of various size and staffing depending on the regions. The Woreda council has dual accountability: upward to its respective zonal and regional executive committees, and downward to its electorate. Woreda executive committees consist of around a dozen members, drawn from elected representatives and sector bureau chiefs. Woredas also feature a court, which falls under the authority of the regional judicial apparatus.

The creation of administrative structures below the Woreda level (e.g. Kebele) is determined by the regional states. The Development agents are operating at the Kebele level and are responsible for the sectoral activities.
Kebeles and Peasant Associations

Kebeles in urban areas and Peasant Associations (PA) in rural areas are small village level bodies that help to provide services to rural households. The PAs provide a link between the state and the farmers and are responsible for enforcing the directives from the government ministries. The PAs are often the only association in a far-off area and governmental services are conveyed through them. Men and women headed households are members of the PAs. Other women do not participate in meetings of the PAs.

The Kebeles (village areas with an average population of 5,000) do not enjoy the same constitutional formality as regions and Woredas, but are in effect the prime contact level for most Ethiopian citizens. Kebele administrations consist of an elected Kebele council (in principle 100 members), a Kebele executive committee of 5-7 citizens, a social court, and the development and security staff posted in the Kebele. The Kebele council and Executive committee’s main responsibilities are:

- Preparing an annual Kebele development plan;
- Ensuring the collection of land and agricultural income tax;
- Organizing local labor and in-kind contributions to development activities;
- Resolving conflicts within the community through the social courts.

Kebele executive committees are answerable to their Woreda council. Unlike executive committee members at the region and zone, elected members receive no stipend. The only official Kebele officer is the council chairman, who receives a small monthly allowance.

6. Assessment of Potential Environmental and Social Impacts

6.1 Overview of Environmental Issues

The critical environmental problems facing Ethiopia, their causes and their impacts and severity are described below.

Drought

56 Ethiopia
58 The social court is an independent organ of the kebele, with a judge appointed by the kebele executive committee and approved by the kebele council.
Droughts are major disasters in Ethiopia, occurring in 7-8 year cycles, at any time a drought may occur in any region. Once drought occurs it normally affects the region for 2 or more years. The country suffers famine due to drought every year (in some part of the country)

<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/ Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>Natural</td>
<td>- Affects more than 10% of the population</td>
<td>- Women poorly nourished give birth to low weight and high risk infants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Chronic state of famine</td>
<td>- Poor health increases chances of death when delivering.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Loss of assets and livelihoods</td>
<td>- Increases women’s workload as they have to fetch water from long distances</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Recurrent – every year in some region</td>
<td></td>
</tr>
</tbody>
</table>

Deforestation

Forest covers only 3-4 per cent of Ethiopia. Annual deforestation is estimated to be 150,000 to 200,000 ha.

<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/ Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled logging of timber</td>
<td>Insufficient energy alternatives to fuel wood</td>
<td>Decreasing forest cover and density</td>
<td>Loss of traditional and non-timber forests products (dues income from selling forest products and as a result women’s economic opportunity)</td>
</tr>
<tr>
<td>Fuel/ wood collection and charcoal production for domestic energy consumption.</td>
<td>Absence of alternative livelihoods leading to unsustainable pressure on natural resources</td>
<td>Loss of biodiversity</td>
<td></td>
</tr>
<tr>
<td>Increasing demand for arable land and grazing areas</td>
<td>Demand for timber</td>
<td>Wildlife habitat loss</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil erosion and watershed degradations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loss of non-timber forest products</td>
<td></td>
</tr>
</tbody>
</table>

Water Supply /Quality and Quantity

The quantity of surface water in twelve major river basins in Ethiopia is estimated to be 110 billion cubic meters. The groundwater is estimated to be 2.6 billion cubic meters. The water supply coverage throughout the country is 26% of total population (76% in urban areas and 19% in rural areas). More than 70% of the diseases in the country are water borne. The sources of water include protected wells, unprotected wells, rivers, lakes or ponds.

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60 Country Profile in Environment: Ethiopia, Japan International Cooperation Agency, November 1999
<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/ Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>Poor land and water management practices</td>
<td>Soil erosion and flooding</td>
<td>Distant water sources that require more time and effort to access for women</td>
</tr>
<tr>
<td>poor land and water conservation practice</td>
<td>Lack of incentives to use water efficiently</td>
<td>Widespread water borne diseases</td>
<td>Poor hygiene increases infection chances</td>
</tr>
<tr>
<td>Uncontrolled pollutant discharge into water bodies and ground water</td>
<td></td>
<td>Widespread poor sanitary conditions</td>
<td>Flooding problems and loss of homes / livelihoods</td>
</tr>
</tbody>
</table>

**Land Degradation**

Land degradation in Ethiopia is due to soil erosion, soil exhaustion and overgrazing. The National Action Plan on Drought and Desertification notes, that “the absence of land use policy and land use plans (at all levels; national, regional and grassroots) has been of the main hindrances to soil conservation”

<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/ Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overgrazing and rangeland management</td>
<td>Population pressure and poverty leading to unsustainable land use practices</td>
<td>Loss of soil fertility, leading to decrease in agricultural productivity</td>
<td>Livestock feeding more difficult on degraded rangelands</td>
</tr>
<tr>
<td>Drought</td>
<td>Poor water holding practices of soils</td>
<td>Reduction of vegetative cover and possible loss of biodiversity</td>
<td>Soil erosion that reduces crop yield</td>
</tr>
<tr>
<td>Deforestation, poor watershed management</td>
<td></td>
<td>Landslides and flooding could lead to resettlement of population segments</td>
<td>Watershed degradation that reduces groundwater and surface water availability</td>
</tr>
<tr>
<td>Farming practices that contribute to soil loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor water management practices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Biodiversity and Habitat Loss**

Approximately 10% of the more than 5,770 species of animals in Ethiopia are endemic. The Ethiopian flora is estimated to comprise some 1,150 endemic species, that are have been affected by industrial and agricultural development.

<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/ Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of habitat from deforestation and settlement</td>
<td>Lack of coordination between agencies</td>
<td>Loss of endemic species of plants and animals</td>
<td>High dependence on forests and water sources for livelihoods</td>
</tr>
<tr>
<td>Reduction in</td>
<td>Lack of funds</td>
<td>Reduces fish and wildlife</td>
<td></td>
</tr>
</tbody>
</table>

29
crop diversity with new seed varieties
- Aquatic ecosystem degradation

<table>
<thead>
<tr>
<th>for conservation</th>
<th>production</th>
<th>makes them vulnerable to habitat loss.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Inadequate or lack of database</td>
<td>- Increased vulnerability to climate change</td>
<td>- Loss of household income due to disappearance of traditional endemic species of plants</td>
</tr>
</tbody>
</table>

**Agricultural Chemicals**

<table>
<thead>
<tr>
<th>Cause:</th>
<th>Underlying cause:</th>
<th>Impact:</th>
<th>Impact: Women/Vulnerable groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Some concern about pesticides and fertilizer application rates for different crops</td>
<td>- Lack of awareness and education</td>
<td>- Pesticides resides in food and water</td>
<td>- Cost of buying chemicals reduces household income</td>
</tr>
<tr>
<td></td>
<td>- Insufficient understanding of chemical handling and opportunities</td>
<td>- Farmers dependence on chemicals</td>
<td></td>
</tr>
</tbody>
</table>

### 6.1.1 HIV – Food Security Relationships

**Food Security**

The food security situation in Ethiopia is considered by the Government to be the most significant of the existing development challenges in the country. The impact on the country is severe food shortage and the main reason is the low agricultural production, which in turn is due to:

- The interrelation between environmental degradation and high population growth;
- Recurring droughts that have reduced the capital assets of farming households;
- Poor soil fertility in combination with inefficient agricultural technologies (and high rates of illiteracy among rural farmers);
- 30-40% loss of crops due to pests

**The HIV Epidemic**

The HIV epidemic is spreading fast and is believed to have reached more than 2.6 million Ethiopians. Approximately 90 percent of the reported cases are in the 20-49 age group. The highest prevalence population group is young women (15-24 year age group). Young women are at higher risk to be infected due to higher biological susceptibility, low social status (less decision making regarding sex and health) and sexual mixing patterns that expose them to HIV transmission from older men who have other partners.

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61 HIV and Food Security – An Analysis for the Ethiopia Programme, CIDA, Dr. P. Sunga, August 2003
62 HIV and Food Security – An Analysis for the Ethiopia Programme, CIDA, Dr. P. Sunga, August 2003
The major factors influencing Ethiopia's vulnerability to HIV infection include:

- Widespread Poverty
- Weak Education sector
- Weak Health sector
- Sharp imbalance in education, health and access to services
- Resource scarcity
- Food insecurity.

The impact of HIV/AIDS on the farmers in Ethiopia has not been fully documented. However, it is likely to result in labour shortages forcing the farming households to shift from cash crops to subsistence crops when food security is endangered. Livestock activities may be reduced or terminated by family members selling off their animals to pay for medical care for AIDS patients. The viability of agricultural credit schemes may be at risk, due to increased morality, or forced liquidation of assets to finance medical care. Skilled labour and labour force in general will be reduced, due to mortality particularly high in that age group and as a result labour intense agricultural work will be difficult to implement, due to loss of labour force.

**HIV – Food Security Relationships**

As described above the HIV epidemic has been shown (in other African countries) to reduce food production, which in turn reduces farm labour and credit availability, cuts into farm assets, forces families to change/reduce crop production or to the abandonment of land. At the other side, food insecurity increases vulnerability to HIV, because off weakness, possible loss of land and parting form their families and communities. In consequence, the HIV epidemic and the food insecurity are closely related and can be seen as a loop: the HIV epidemic exacerbates the food security situation and food insecurity leads to increased vulnerability of the population to HIV exposure and infection.

### 6.1.2 Gender and the Environment

Women have a particularly important part in sustainable and ecologically sound consumption, production and approach to natural resources management. Ethiopian women rely on natural resources as a means of their livelihood. Women’s main concern is family welfare and household food security and the provision of water, fuel and other resources is therefore vital. Various environmental resources are used, for example soil to produce pottery, grass to weave baskets, guard as household utensils, and bamboo as furniture, for weaving of baskets and to produce spinning tools. Plant genetic resources are used to prevent and treat different types of diseases. Women have accrued a wealth of indigenous knowledge on the use of natural resources for treatment and preservation of foods and in the use of medical plants.

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63 HIV and Food Security – An Analysis for the Ethiopia Programme, CIDA, Dr. P. Sunga, August 2003
The majority of women’s activities are based on the use of natural resources as raw material and the deterioration and exhaustion of these resources poses a serious negative impact that is linked to poverty and lack of food security. The lack of access to natural resources and degrading environmental conditions increases women’s workload significantly. For example, the depletion of forest resources means that women have to travel long distances in search of fuel wood. Another major inference of women’s workload and their own and families' health is the lack of access and control over adequate and clean water for household consumption. Ethiopian women are coping with already overburdened domestic farm, community roles and responsibilities.

The constitution and revised family law ensure women’s access and control over land ownership and inheritance. However, the key source of economic empowerment for women: land ownership has remained under the control of the male family members.

Extension services are more easily accessed by male and female heads of households, due to their registered membership at the Peasant Associations, thus traditional and patrimonial transmissions of land restricts women’s access and control over the main productive resources and new knowledge regarding those.

Key issues to consider relating gender and environmental management are:

- Women’s rich indigenous knowledge and experience on the use of natural resources and in the management of soil, water, trees crop, livestock etc.
- The traditional division of labour between men and women puts a heavy load on women and leave little room or opportunity for self development and innovation
- The traditional system regarding resource control limits women’s access and control over the important productive resources (land, forest, training, extension etc).
- Lack of gender disaggregated data and information, limits the natural resource programme managers, professionals and decision makers to develop gender sensitive programmes and to implement and monitor the impact of such a programme.
- Women and men are active players in forest resource development
- The reduction of household energy resources increases the burden on women significantly, since women are responsible for household energy supply
- Women compared to men have less access to technologies and information.
- There are few female professionals in the field of natural resource management.

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64 HIV and Food Security – An Analysis for the Ethiopia Programme, CIDA, Dr. P. Sunga, August 2003
The major negative impacts on women and other disadvantage groups, as a result of environmental degradation, have been recognised by the government and can be used as a catalytic argument to build important and focused measures in the Rural Capacity Building Project’s components that reflects the specific needs of women and other vulnerable groups.

The Action Plan for the Federal Policy on the Environment\textsuperscript{65} describes the integration of social, cultural and gender issues in sustainable resource use and environmental management. The priorities that relate to the project include:

- Undertake an awareness training programme for development and extension staff, identifying and emphasising the role of women in agriculture and natural resource use and management and redirecting attention of extension activity to focus on them.

- Undertake a study on women’s traditional rights to natural resources and the cultural values places on those rights and to identify the constraints to and opportunities for equal access to education, training, jobs and status, as compared to men.

- Development and support of participatory and democratic community organisations, fully enfranchising women, disadvantage social groups, disabled persons and, as appropriate, youth and children, to effectively participate in the planning and implementation of all development activities.

- Incorporate into research programmes for improved land, crop and animal husbandry, the development of appropriate technologies, tools and utensils which reduce the workload of women and the disabled.

6.2 Analysis of Alternatives

The proposed project has evolved through many years of difficult experience in the agricultural sector in Ethiopia. Table 8 summarizes the major alternatives and their advantages and disadvantages:

Table 8: Analysis of Alternatives

<table>
<thead>
<tr>
<th>Option</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Quo (No project)</td>
<td>- almost none; risks of doing nothing are significant</td>
<td>- limited results of extension to date on agricultural production</td>
<td>- GOE is committed to agriculture-led development; status quo is not acceptable to the government</td>
</tr>
<tr>
<td>Demand-driven Extension (Proposed Project)</td>
<td>- more and better trained development agents with more advanced methods</td>
<td>- requires significant changes from traditional extension approaches</td>
<td>- GOE has adopted the Agricultural Development Led Industrialization Policy (ADLI) that supports a greater role for small farmers and decentralized services</td>
</tr>
<tr>
<td>Supply-driven Extension Alternatives (Expand Current System)</td>
<td>- none; because of the general lack of client (farmer) orientation</td>
<td>- less responsive to farmer’s priorities</td>
<td>- the limitations of this approach are widely recognized in Africa and elsewhere</td>
</tr>
<tr>
<td>Non-government Extension Alternatives</td>
<td>- capable of providing direct extension support to a small number of certain type of clients</td>
<td>- very limited geographic impact likely in the agricultural sector</td>
<td>- GOE not committed to significant non-government involvement in extension services</td>
</tr>
</tbody>
</table>

6.3 Beneficial Impacts of the Project

6.3.1 Environmental Benefits
- Increased capability for farmers to apply techniques that increase agricultural output and revegetation and regeneration of watersheds.
- Reduced soil loss as a result of replacing poor farming practices with more environmentally sustainable practices and land management skills.
- Increase water conservation and water availability through water harvesting methods and improved water use efficiency in agriculture.
- More awareness of alternatives to chemical inputs and less misuse/overuse of agricultural chemicals.
- Enhanced natural re-vegetation of landscapes through community organization of grazing bans and ‘cut and carry’ approach to livestock feeding.
- Enhanced habitat for wildlife as a result of landscape revegetation.
- Increased diversity of plant and animal species through use of a wider range of agricultural / agro-forestry interventions.

6.3.2 Socio-economic Benefits

- Improved nutrition and health due to increased income from agricultural production
- Increased food security due to increased income from agricultural production and as a result less dependency on food aid (food for work etc.)
- Reduced workload for women and other vulnerable groups as a result of extension service techniques targeted at women's and other disadvantage groups needs (fuel saving techniques, water saving methods)
- Increased control of household income for women as a result of extension service techniques targeted at women's needs generating income (horticulture etc.)
- Increased number of educated women through TVET
- Increased employment opportunities for women as Development Agents (empowerment)
- Increase HIV / AIDS awareness due to training and campaign in TVETs, FTCs and DAs.

6.4 Analysis of Potential Impacts

Table 9 provides a summary of the types of potential impacts of the project activities. This is intended to highlight some of the potential positive and negative effects of the project. ‘Scale’ is defined as the geographic and sectoral scope and magnitude of the changes in conditions that may be attributed to the project compared to without the project. ‘Significance’ is defined as the relative importance of the changes that are created in physical, biological, social and economic systems in context with other variables that affect these systems.
Table 9: Preliminary Matrix of Indicative Environmental and Social Impacts

<table>
<thead>
<tr>
<th>Activities</th>
<th>Physical</th>
<th>Biological</th>
<th>Social</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Civil Works</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buildings and related services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(water, power, waste mgt., etc.)</td>
<td>Alteration of drainage runoff and infiltration</td>
<td>Vegetation removal and habitat loss</td>
<td>Displacement of any existing occupants and land and resource uses</td>
<td>Employment and income opportunities in construction and operations</td>
</tr>
<tr>
<td></td>
<td>Increased water supply requirement could exceed capacity of local systems</td>
<td>Surface runoff contaminates potential to affect water quality</td>
<td>Population immigration effect on community stability and HIV infection</td>
<td>Costs of additional services imposed on local government</td>
</tr>
<tr>
<td></td>
<td>Groundwater availability and quality could not be sufficient</td>
<td>Forest harvesting related to building construction</td>
<td>Potential for excavation of archaeological relics</td>
<td>Loss of livelihoods from displacement of resources and occupants</td>
</tr>
<tr>
<td></td>
<td>Solid waste volumes could exceed landfill capacity</td>
<td>Impact Scale: depends on the extent on ground cover disturbance and materials used in construction</td>
<td>Abandonment of mining sites and lack of reclamation, creating stagnant pools</td>
<td>Scale: depends on the extent to which locals participate in construction and operations and cost recovery mechanisms for local services</td>
</tr>
<tr>
<td></td>
<td>Liquid waste volumes could exceed capabilities of on-site systems</td>
<td>Significance: Mostly Low (given existing development)</td>
<td>Loss of livelihoods</td>
<td>Significance: Moderate, depending on uses displaced</td>
</tr>
<tr>
<td><strong>Impact Scale</strong></td>
<td>Impact Scale: depends on on-site systems</td>
<td>Impact Scale: mostly confined to college campuses but some land acquisition may be required; relation to community affects potential to manage social impacts</td>
<td>Impact Scale: low</td>
<td>Impact Scale: relatively minor</td>
</tr>
<tr>
<td><strong>Significance</strong></td>
<td>Significance: Low</td>
<td>Significance: Moderate due to incremental nature of the work</td>
<td>Significance: Moderate, depending on uses displaced</td>
<td>Significance: Low</td>
</tr>
<tr>
<td><strong>Farm Structures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alteration of drainage runoff and infiltration</td>
<td>Potential changes in biota due to farm runoff</td>
<td>Potential small scale displacement of any existing occupants and land and resource uses</td>
<td>Possible interference with existing land uses and rights of way</td>
</tr>
<tr>
<td></td>
<td>Potential to contaminate groundwater and surface water from poor manure/waste management</td>
<td>Some conversion of natural vegetation</td>
<td>Impact Scale: new farm structures are relatively small scale</td>
<td>Potential to utilize biogas to replace other fuel sources</td>
</tr>
<tr>
<td></td>
<td>Impact Scale: small, but depends on site management</td>
<td>Impact Scale: relatively minor</td>
<td>Significance: Low</td>
<td>Local access to animal health advice</td>
</tr>
<tr>
<td></td>
<td>Significance: Low - Moderate</td>
<td>Significance: Low</td>
<td>Impact Scale: relatively minor</td>
<td>Significance: Low</td>
</tr>
<tr>
<td></td>
<td>Alteration of</td>
<td>Possible minor</td>
<td>Potential to</td>
<td>Improved access</td>
</tr>
<tr>
<td></td>
<td>Alteration of</td>
<td>Alteration of</td>
<td>Potential to</td>
<td>Any change in biota due to farm runoff</td>
</tr>
<tr>
<td></td>
<td>of</td>
<td>of</td>
<td>of</td>
<td>of</td>
</tr>
</tbody>
</table>

66 Additional land acquisition may occur in the future at some TVETs, and this may increase the social and economic effects.
### Access Roads Upgrading
- Drainage runoff and infiltration
- Potential extraction of nearby borrow material

**Impact Scale:** Limited by existing right of way
**Significance:** Low

### Irrigation Canals
- Potential changes in drainage patterns and source water bodies
- Location and abundance of the source waters unknown
- Poor irrigation practices can adversely affect soil quality

**Impact Scale:** Approx. 1 km of canal at each regional college
**Significance:** Unknown

### TVET Training
- Curriculum and Training modules on:
  - Land management
  - Soil fertility enhancement
  - Water management
  - Water harvesting
  - Irrigation canal operations (incl. malaria prevention)

### FTC Training and Extension Services
- Potential to enhance soil fertility
- Increased irrigation water availability

---

67 This involves various levels of upgrading roads within TVETs and some roads to TVETs.
68 The canals are intended to serve TVET demonstration farms on the campuses.
through rainwater harvesting
• Potential to reduce soil loss
reduce or increase crop diversity
• Potential to enhance landscape regeneration and ecosystem functions
opportunities for women in agriculture and agri-business

<table>
<thead>
<tr>
<th>Animal Husbandry assistance</th>
<th>Potential to reduce soil loss</th>
<th>Potential to reduce soil loss</th>
<th>Potential to reduce soil loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock management has an important effect on rangelands</td>
<td>Healthier animals</td>
<td>More nutrients available to enhance soil quality</td>
<td>Improved breeds and skills generate higher yields</td>
</tr>
<tr>
<td>Livestock management has an important effect on rangelands</td>
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<td>Improved breeds and skills generate higher incomes</td>
</tr>
</tbody>
</table>

Note: this table is indicative only of potential project effects and has been prepared only for the purposes of preliminary scoping of impacts.

### 6.4.1 Scoping of Impacts

The project involves several different types of outputs; facilities (civil works), training of DAs, training and extension services for farmers. In conformance with the ESMF purpose, the impact analysis includes both the effects of facilities development and the impacts on farmers at the field level (outcomes). Most of the potential impacts identified in Table 9 are considered to be relatively small scale and low significance. The primary activities of potentially higher level impact are the future land acquisition for TVETs expansion (not yet defined), and the uncertainties of water sources/sustainability for the proposed small scale irrigation canals at the TVET colleges. It should also be noted that major development of many of the TVET buildings and works has already taken place with funding of the Government.

### 6.4.2 Key Social Concerns

Based on project information to date, the following are the major areas of social concern that the project impact management process should especially consider:
• **Future Expansion of TVETs and Potential Displacement of Existing Farmers:**
  Some of the TVET propose to expand operations and will need future land. Some conflicts could arise with farmers, especially since some of the areas are agricultural productive lowlands. This issue is addressed in the Resettlement Policy Framework.

• **Participation of Farmers:**
  Agricultural extension has suffered in the past due to lack of farmer participation and a limited measure of available technical extension packages (not addressing the needs of the farmers nor suitable for the different regional typographies in the country).

• **TVET Gender Issues:**
  There are traditional and cultural constraints for women from some regions to participate in agricultural training. Currently TVET admissions involve 10-15 percent female students. Strategies to overcome these barriers to ensure equal opportunity need to be considered.

• **HIV Prevention and Awareness:**
  Any initiative that increases the physical distances from family and community (residential colleges) also poses an increased risk for HIV spread. The Rural Capacity Building Project presents an important opportunity to expand and emphasis HIV prevention and awareness campaign through the TVET colleges. The Ministry has initiated a new programme in this regard.

• **Responsiveness of Extension Services to Women’s and Vulnerable Group’s needs:**
  The FTC extension services will be confronted with particular challenges in addressing the needs of women and vulnerable groups (old, sick etc.) and the suitability of the extension packages to meet their needs. These specific needs (such as fuel saving techniques, water sampling methods, horticulture, kitchen gardens etc.) sometimes include non farming activities and the possible expansion of extension services to include these is essential. The extension services delivery should recognize the limited household labor available for agricultural production (i.e. development of low labor intense technologies).

• **Limitations on Equal Access to FTC Extension Services:**
  These limitation include; the possible constraints that may exist for women to obtain FTC extension services due to traditional and cultural barriers and the inadequacy of the DAs capabilities to interact with women.

• **Distance for Farmers to Access FTC Extension Services:**
  The physical distance between the Farmer and the FTC poses a possibility that only the farmers in the close range area of the FTC will be served by the DAs, although the intention is that the DAs provide an outreach approach to farmers. The DAs communication constraints to interact with the farmers in a meaningful way pose another barrier to effective extension service delivery.
• **Limitations on Farmers Access to FTC Training:**
  The initial training program propose (2 full days/week for 6 months, plus travel time) may be too demanding for of the farmers. While undertaking training, the farmers are forced away from their agricultural daily duties (i.e. less productive, leading to less house hold income, short term). Further more, single headed house hold may not be able to leave their home to attend training and women may not be able to leave their homes due to child rearing and cultural / traditional constraints. The farmers involved in a time demanding training may increase the labor burden for those remaining on the farm (often women). A more flexible approach to the training of farmers could be developed (i.e. outreach training and similar).

6.4.3 **Key Environmental Concerns**

Based on project information to date, the following are the major areas of environmental concern that the project impact management process should especially consider:

• **Water Supply at TVET/ARC facilities:**
  Water shortages are a problem at several of the TVET sites and new developments may well aggravate water shortages unless efforts are made to expand local water supply to TVET and FTC sites, in order to avoid adverse effects on existing waters users.

• **Waste Management TVET/ARC facilities:**
  TVET facility developments will need to ensure that waste systems are adequately engineered to meet acceptable health standards. Where livestock shelters are being build, waste water discharges must be properly managed to avoid local pollution of ground waters and surface waters.

• **TVET Irrigation Canals:**
  Small canals are planned at each of the regional colleges, total about 2 km of canal, to be used for demonstration of irrigated agriculture. No details are available, but the source, development and operation of the systems need to be carefully planned.

• **TVET Construction Impacts:**
  The Development of buildings and roads at TVET colleges could have local site impacts that need to be mitigated and management in conjunction with construction contracts.

• **FTCs Development Site Impact:**
  These are small scale buildings that will likely have very small environmental concerns at a large number of sites (15,000). However, there is no mechanism in place to ensure that basic siting and operational criteria are followed.

• **Ecosystem and Biophysical Effects of Extension Strategies:**
  The scale and rapid expansion of extension technologies and services under the project will require sufficient technical support to ensure that the technologies are environmentally
appropriate and sustainable (e.g. use of agricultural chemicals and alternatives, promotion of good irrigations practices, etc.).

7. **Environmental and Social Mitigation and Management Process**

This section of the ESMF provides the criteria and mechanism for review of the biophysical and socio-cultural impacts of the project, for prescribing mitigation measures where appropriate, and for authorizing the activities to ensure that they are implemented in a manner consistent with the environmental and social policies of the Government of Ethiopia and the World Bank. The processes for review of project activities address three components:

1) **TVET Training** – The environmental and social aspects of the training programme will be further reviewed as part of the ongoing project design of activities to strengthen the curriculum and training methods. Changes have already been made to some of the aspects (more participatory farmer communication methods and HIV/AIDS) and the Natural Resource Management training involves many environmental aspects.

2) **TVET/ARC Facilities Development and Operations** – Environmental screening by TVET engineers and clearance by EPA regional offices of the land acquisition, buildings, roads, civil and related works and recurrent operational activities associated with development and expansion of Technical Vocational Educational & Training Colleges. Potentially, some civil works may also be required at Agricultural Research Centres, depending on whether there is carry-over from uncompleted works in the Agricultural Research and Training Project (ARTP).

3) **FTC Development and Operations** – Environmental screening by Woreda and clearance by the Regional Bureaus of Agriculture of the establishment of 15,000 FTCs and the provision of training and extension advisory services, which are delivered by Development Agents and supervised by the Woreda Department of Agriculture, as outlined in Government of Ethiopia plans.\(^69\)

The proposed environmental/social management of these two components is outlined below. Training will be provided as explained in Section 8.3 to assist the implementation of these processes.

7.1 **Processes for Review and Clearance of Project Activities**

\(^69\) The FTCs are intended to create business oriented, skilled, motivated and environmentally conscious agricultural practioners capable of utilizing modern technologies – Ministry of Agriculture, Farmers Training Centers, April 2003.
The environmental review process is focused on avoiding and mitigating the adverse biophysical and social impacts of the TVETs/ARCs and FTCs. Table 1 summarizes the project activities and their locations (to the extent that they are known to date) that are subject to World Bank Safeguard Policies. This includes a preliminary analysis of the types of infrastructure improvements including civil works at new and existing facilities at TVET colleges such as buildings, water and waste systems, farm structures, access roads and irrigation canal upgrading, and potentially some civil works at some Agricultural Research Centres. The requirements for further land acquisition are not known at the time of ESMF preparation, but it is likely that some additional lands will be required at several TVETs, and community lands are being allocated for FTCs.

The FTC planning to date suggests that each site will have several small buildings for meeting/workshop rooms and separate accommodation for Development Agents. The project activities of concern also include FTC site development and the proposed operations – farmer training and extension advisory services, including assistance in crop production, animal health and natural resources management for agriculture. The review process is intended to assist in the participatory approach, gender awareness, reducing adverse biophysical and social practices in agriculture, and supporting Government of Ethiopia and World Bank policies.70

7.1.1 Environmental Review Process

Figure 1 outlines a facilities development and mitigation review process for:

a) identifying any adverse impacts of the project activities;

b) incorporating mitigation measures into construction and operational phases of the project activities implementation plans and documents; and

c) reviewing and clearance of the project activities to proceed, subject to any necessary mitigation and to monitoring.

The operational steps are outlined in section 7.2 below. The Regional EPA Offices will be responsible for review and clearance of the construction activities of the TVET/ARCs. The Regional BoAs will be responsible for review and clearance of FTC construction and operations. Form A (Annex 1) and Form B (Annex 2) are the main tools for implementing this process.

7.1.2 FTC Operations Review Process

Figure 2 outlines a process to guide establishment and operations of FTCs under the supervision of the Regional Bureau of Agriculture and the Woreda. This includes:

70 For example - Government of Ethiopia commitments to the National Action Plan on Drought and Desertification, Intl Agreement on Persistent Organic Pollutants, Convention on Conservation of Biological Diversity, etc. and Bank policies related to Pest Management, Habitat Conservation etc. – all of which can be affected in some form by agricultural practices.
a) operating FTCs in a manner that is environmentally and socially responsible and farmer-based (demand driven);
b) identifying farmer needs, particularly taking into account extension packages aimed at women, the poor and marginal farmers;
c) assessing the performance of ongoing extension assistance and impacts on client groups served by the DAs;
d) developing an FTC service plan of action which will guide extension services in the future, including opportunities to address particular priorities and sustainable agriculture issues in the local area; and
e) reviewing and authorizing the plan and allocating the funding in accordance with the plan.

The operational steps are outlined in Section 7.3 below. The FTC Service Plan (Annex 3) and Form B - FTC Environmental and Social Impact Screening are the main tools for implementing this process.

The costs associated with administering the environmental review and the extension services review will be borne by the project coordination component and supplemented by the Capacity Development funding outlined in Section 8.3.

7.2 Environmental and Social Impact Screening, Assessment and Mitigation

7.2.1 Facilities Development, Screening and Clearance

As outlined in Figure 1, the following steps will apply to TVET and ARC facilities, and to FTC development:

Step 1: Complete Form A (Annex 1) during site visits to the TVET/ARC development locations. This will be done by the TVET and ARC and the engineering section in MoA staff, in consultation with regional EPA officials. Specific engineering studies will be required depending upon the proposed facilities and information from these studies may in some cases be required to complete the questions in the form. Complete Form B (Annex 2) for the FTCs; to be done by Woreda Department of Agriculture (in consultation with Regional BoAs, if needed). Technical assistance/capacity building will be provided (see Section 8.3).

Step 2: Determine the appropriate mitigation measures and whether an Environmental Assessment (EA) is needed to address significant adverse impacts that cannot be routinely managed. See Section 7.2.2 below. In rare cases, no further action is needed and the proposals can proceed directly to the Facilities Authorization and Implementation Document.
In most cases, however, there will be mitigation measures required to avoid, reduce or manage impacts and these should be specified in sufficient detail and location to allow their attachment to construction documents and drawings. An outline of potential mitigation measures is presented in Table 10. Additional and more specific measures can be prescribed during the review process.

**Figure 1: Environmental Review Process**
**Step 3:** For TVETs/ARCs submit the facilities development proposal to the Regional EPA Office, along with Form A and any necessary mitigation measures as identified in Step 2. The approval process within the project management structure will be determined once the RCBP design is finalized. For FTCs, submit Form B to the Regional BoA for clearance.

**Step 4:** Construction monitoring of TVETs/ARCs will be done regularly by Regional EPA staff and the monitoring of the FTCs will be done by the Regional BoA staff to ensure mitigation measures are being effectively implemented. This will normally include ongoing and regular site visits prior to, during and after construction in order to ensure that the site specific mitigation measures are being adhered to. Compliance reports will be submitted to the responsible persons within the Project Coordination Unit (see Section 9.3) for information and any necessary action. In the case of some unexpected event that was not anticipated in the environmental screening and assessment (such as uncovering cultural relics during excavation, or sudden flooding events that create unmanageable site conditions), the construction plans, activities and schedules may be reconsidered in order to reasonably mitigate the effects of these events.

**Step 5:** Operations and maintenance will be guided by a TVET/ARC Operations and Maintenance Plan that addresses the various waste disposal, water supply and land and access management activities that could affect the environment and community during the operational phase. Monitoring of compliance will be done by the Regional EPA Offices. The FTCs may be requested to monitor specific operational aspects as determined in the Monitoring Plan.
<table>
<thead>
<tr>
<th>Social Issues /Concerns</th>
<th>Mitigation Measures</th>
<th>Implementation Means</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future TVET/ARC expansion</td>
<td>• Identify alternative lands to avoid displacements of existing occupants and uses. • Comply with Resettlement Policy Framework with regards to unavoidable displacement of existing occupants and uses.</td>
<td>• Environmental Screening – Form A • EA Study • RPF – Resettlement Plan</td>
<td>• TVET/ARC, MoA engineers, under the oversight and approval of the regional EPA.</td>
</tr>
<tr>
<td>TVET Gender Issues</td>
<td>• Examine alternative measures of increasing the number of female students in the TVET programmes</td>
<td>• TVET policy and administration</td>
<td>• Regional Bureau responsible for TVET admissions</td>
</tr>
<tr>
<td>Farmer based approach to Extension</td>
<td>• Preparation of participatory FTC annual service plan that guides delivery of extension services at the local level</td>
<td>• Approval of FTC annual serviced plan by Woredas</td>
<td>• DAs under the direction of Woreda Department of Agriculture</td>
</tr>
<tr>
<td>HIV prevention and awareness</td>
<td>• Effective implementation of the effective HIV prevention and awareness programmes and campaign in TVETs</td>
<td>• TVET training and college operations</td>
<td>• TVET Curriculum Department MoA and PCO</td>
</tr>
<tr>
<td>Responsiveness of Extension Services to needs of women and vulnerable groups and DAs capability to communicate with farmers</td>
<td>• Development of technical packages suitable for women and vulnerable groups’ needs (i.e. households with limited labour availability). • Effective implementation of the DAs communication strategies with farm households, especially with regard to women</td>
<td>• TVET and ARC research programmes on technical packages • TVET training programmes on communication</td>
<td>• Agricultural Research Centres and TVET faculty • TVET Curriculum Department MoA</td>
</tr>
<tr>
<td>Distance for farmers to access to FTCs Extension Services</td>
<td>• Provide flexibility and innovation in delivery of extension services to provide for remote farmers, especially single headed households and women unable to access FTCs</td>
<td>• Sufficient resources and direction for DAs to implement outreach programmes</td>
<td>• Woreda Department of Agriculture</td>
</tr>
<tr>
<td>Limitation on farmer’s access to FTC Training Programmes</td>
<td>• Provide flexibility and innovation in delivery of training activities suitable for remote farm households and those unable to participate due to time constraints</td>
<td>• DAs training programmes for farmers</td>
<td>• DAs under the direction and guidance of Woreda Department of Agriculture</td>
</tr>
<tr>
<td>Environmental Issues/Concerns</td>
<td>Mitigation Measures</td>
<td>Implementation Means</td>
<td>Responsibility</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------</td>
<td>----------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| Water Supply                 | • Ensure that the water sources and supply systems are able to accommodate projected demand of the TVET  
• Ensure that water systems are designed and installed in a manner that meets approved engineering standards  
• Encourage rooftop water harvesting systems | • TVET/ARC facility design and construction contracts.  
• As above | • TVET/ARC Engineers (with additional support)  
• As above |
| Waste Management             | • Ensure that wastewater disposal systems are designed to safely treat projected waste volumes including discharge from livestock structures  
• Encourage waste management programmes that reduce, reuse and recycle waste in the TVET colleges, including possible biogas demonstration with livestock operations | • As above  
• TVET operations | • TVET management and operations staff |
| TVET Irrigation Canals       | • Ensure sufficient quantity and secure allocation of irrigation source water, taking into account existing water users  
• Include water conservation measures in irrigation operations and training  
• Minimise disturbance to natural vegetation and drainage  
• Adopt measures to reduce potential for malaria vectors in canal operations | • TVET irrigation systems design plans and contracts  
• TVET curriculum and training programme  
• Operation procedures for irrigation systems  
• Construction contract specifications/monitoring | • TVET/ARC Engineers (with additional support)  
• TVET faculty  
• Contractors  
• TVET faculty |
| TVET Construction Impacts    | • Ensure that contractors supplying stone, aggregate and other material roads and buildings undertake proper rehabilitation of mining or borrow pits  
• Procedures in the event that there is excavation of archaeological or cultural artifacts | • Construction contract specifications/monitoring  
• EA Study where required  
• Construction contract specifications/monitoring | • TVET/ARC Engineers  
• Contractors |
<p>| FTC Development              | • Ensure that basic health and environmental indicators are met in the siting and construction of | • FTC development guidelines | • Woreda Department of Agriculture |</p>
<table>
<thead>
<tr>
<th>Ecosystem and Biophysical Effects of Extension Strategies</th>
<th>FTCs</th>
<th>FTC Extension Service Delivery</th>
<th>Agricultural Research Centres and TVET Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Encourage and support Agricultural Research Centres in developing and verifying extension technologies and practices that complement ecosystem functions (e.g. integrated pest management) and natural resources sustainability (e.g. water conservation and efficiency measures)</td>
<td>• FTC Extension Service Delivery</td>
<td>• Agricultural Research Centres and TVET Faculty</td>
<td></td>
</tr>
</tbody>
</table>

7.2.2 **Criteria and Terms of Reference for Environmental Assessments**

In the event that significant environmental impacts have been identified in the initial environmental review, an environmental assessment (EA) will be carried out. The EA will identify and assess the potential environmental impacts of the proposed construction activities, evaluate alternatives, as well as design appropriate mitigation measures, management, and monitoring measures. These measures will be contained in an Environmental Mitigation Plan (EMP) which will be prepared as part of the EA. Preparation of the EA and the EMP will be done in consultation with the relevant stakeholders including potentially affected persons. The EPA Regional Offices will arrange for the (i) preparation of EA terms of reference; (ii) recruitment of consultants to carry out the EA; (iii) review and clearance of the EA/EMP; and (iv) public consultations.

**Environmental Mitigation Plan (EMP):** This document will be prepared as part of the EA. The EMP should consist of a set of mitigation measures, monitoring and institutional measures to be taken during the implementation and operation of the health centers to eliminate adverse environmental impacts, offset them or reduce them to acceptable levels. The EMP should also include the actions needed to implement these measures, including the following features:

- **Mitigation:** Based on the environmental impacts reported in the EA, the EMP should describe with technical details each mitigation measure, together with designs, equipment descriptions and operating procedures as appropriate.

- **Monitoring:** Environmental monitoring needs to be carried out during the construction, operation and maintenance of the health centers, in order to measure the success of the mitigation measures. The EMP should include monitoring objectives that specify the type of monitoring activities that will be linked to the mitigation measures. Specifically, the monitoring section of the EMP provides:
• A specific description and technical details of monitoring measures that include the parameters to be measured, the 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.

• Monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and to furnish information on the progress and results of mitigation.

**Institutional arrangements:** The EMP should also provide a specific description of institutional arrangements, i.e. who will be responsible for carrying out the mitigating and monitoring measures (for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting and staff training). In addition, the EMP should include an estimate of the costs of the measures and activities recommended so that the TVET/ARC organizations can budget the necessary funds for implementing these measures. Similar to the process for carrying out the EA, the mitigation and monitoring measures recommended in the EMP should be developed in consultation with all relevant stakeholders, including NGO’s and potentially affected persons to include their concerns and views in the design of the EMP.

**Public Consultations:** Public consultations are critical in preparing a meaningful EA. The first step is to hold public consultations with the local communities and all other interested/affected parties. These consultations should identify key issues and determine how the concerns of all parties will be addressed in the terms of reference of the EA. To facilitate meaningful consultations, the EPA Regional Offices should provide all relevant material and information concerning the proposed construction activities in a timely manner prior to the consultation, in a form and language that are understandable and accessible to the groups being consulted. Depending on the public interest in the potential impacts of the proposed construction activities, a public hearing may be requested to better convey concerns. To ensure that an appropriate public consultation mechanism is developed, the EPA Regional Offices should ensure that the EA terms of reference include such a requirement. Once the EA has been reviewed and cleared by EPA, they will inform the public about the results of the EA. This approach is consistent with the Bank’s OP 4.01 Environmental Assessment.

RCBP project activities with significant environmental or social effects will require an Environmental Assessment (EA). These will be identified during the environmental review process. They could include the following: new access roads, new irrigation canals, and other proposed activities that,
based on the Environmental and Social Screening process, are deemed by the ‘designated EPA Officer’ to have potentially significant adverse biophysical or socio-cultural impacts.

The term of reference for an EA will be drafted by EPA Regional Offices, and will include:
- a description of the project area and activities of concern for the EA
- an assessment of the type, scale, frequency and significance of the adverse social and environmental impacts
- an analysis of the various means of avoiding these adverse impacts
- an analysis of the mitigation measures needed to reduce the impacts to an acceptable level
- an analysis of the adverse impacts that cannot be adequately mitigated and measures needed to offset or compensate for such impacts
- the consultative process for undertaking the EA

7.3 FTC Operations

The FTC review process addresses operations on-site and off-site, the training and extension activities. It includes a requirement for preparation of an FTC Service Plan (Annex 3) to ensure that the operations are responsive to farmers needs and to the objectives of the project.

Figure 2 outlines the general process for FTC Extension Services Review. It encompasses the following steps:

Step 1: Under the guidance of the Regional BoA, the Woreda Department of Agriculture will establish FTC facilities in accordance with the Environmental Review Process and monitor operations as per the Monitoring Plan.

Step 2: DAs will arrange consultations at representative locations with representative farmers or farming/community groups in participatory manner (see Section 10 - Consultation Plan). This should include a cross-section of large and small farmers, including women, displaced farmers and others.

Step 3: Prepare a Draft FTC Service Plan using the Annex 3 recommended process and format that incorporates the key comments from the farmer consultations.

Step 4: Submit the draft plan for clearance by the Woreda Department of Agriculture and make revisions based on comments received.
7.3.1 Farmer Consultations

The process commences with a consultative process with the FTC farmer clients. The purpose of the consultation is to ensure that the selection of extension activities is participatory and responsive to the needs of marginal farmers, women and the poor, and consistent with environmentally sustainable agriculture. This requirement is consistent with the preliminary project design which specifies that 15,000 FTCs will each train 120 farmers per year using real life experiences as a basis for teaching.\textsuperscript{71} The required consultations will complement the World Bank’s Safeguard policies while supporting the continual learning and farmer-based adaptive research modes of the Ministry of Agriculture.

7.3.2 Service Plan Preparation and Authorization

The FTC extension services are intended to be demand-oriented (farmer based), and promote technologies and practices that are environmentally sustainable, gender-sensitive and also meet the needs of marginal farmers and the poorest groups of farmers. Annex 3 presents a preliminary process guide and format for the plan. The Woredas are designated to approve the FTC Service Plan, consistent with any policy direction provided by the Regional Bureau of Agriculture. This approval provides the necessary direction to DAs to guide them in farmer-responsive extension services programming.

\textsuperscript{71} Ministry of Agriculture, Establishment of Farmers Training Centers, TVET Coordination Office, 2003, p.3
Figure 2: Farmer Training Centers Operations Review Process

- Regional Bureau of Agriculture
- Woreda Department of Agricultures
devlopment and monitoring of FTC operations
- FTC Annual Farmer Participation and Consultation, including yearly evaluation
- Draft/Final Extension Service Plan
- Woreda Review and Authorization
- Development Agents assist farmers in selecting and applying technology packages as guided by service plan
8. Institutional Arrangements for ESMF Implementation

8.1 Overall Framework

The institutional structure for implementing the ESMF for the Rural Capacity Building Project involves various environmental and social impact mitigation and management activities at the national, regional, Woreda (local government) and Kabele (village organization) levels. Figure 3 outlines the key components of the ESMF implementation.

A Project Coordination Unit (or similar structure) will provide general direction and oversight for the process of ESMF mainstreaming into the project activities and operations. The ESMF implementation involves two processes – Environmental Review and FTC Operations Review. The former is divided into separate processes (and screening forms) for TVETs/ARCs and for FTCs construction.

It is proposed that the Regional EPA staff will oversee Environmental Review Process presented in Section 7.1.1 and Figure 1. Form A is the focus on the environmental review. They will cooperate with TVET facility engineers and college administrations on the environmental review and, where land acquisition is required, on the implementation of the procedures under the World Bank’s Resettlement Policy Framework (RPF). The Regional BoA staff will oversee the FTCs development, with Form B as the focus of the environmental review.

TVET training programs will address some of the relevant social and environmental mitigation concerns presented in Table 10 (Mitigation Measures). The Agricultural Research Centers will assist in development and testing of some of the extension packages. (It is unclear whether additional civil works will be required at ARCs; but if so, this would require Environmental Review by EPA, similar to TVET civil works). Links between the research centers and selected FTCs is also proposed in a two-way flow of knowledge about the extension experiences.

Regional Bureaus of Agriculture will organize and monitor the field mobilization of DAs to Woreda Agriculture Departments. The Woredas in turn will have a lead function in ensuring that the FTCs conform to any prescribed mitigation measures. The DAs, in collaboration with the Kebele will implement the FTC Operation Review Process as outlined in Section 7.1.2 and Figure 2.
Figure 3: Conceptual Outline of ESMF Implementation

Project Coord. Unit:
- Environmental Coordinator
- Social Coordinator

Environmental Review Process

TVET/ARC Facilities Screening Form A by MoA Engineers

FTC Facilities Screening Form B by Woreda/DAs

Review and Clearance by EPA Regional Office

Review and Clearance by BoA Regional Office

Facilities Construction and Monitoring – MoA Engineers

Facilities Construction and Monitoring – Woreda and Kebele

EPA Regional Offices reporting on ESMF/RPF compliance

BoA Regional Offices reporting on ESMF/RPF compliance

FTC Annual Service Plan

Farmer Participation and Consultation

Establish FTC Operations (Woreda)

Review and Clearance by Woreda

Woreda Dept. of Agriculture monitoring of results

FTC Operations Review Process

Establish FTC Facilities Screening Operations Form A by Form B by orat Engineers Woreda/DAs

Review and Farmer Clearance Participation by EPA by BoA and Regional Consultation Office Office Facilities Construction and Monitoring – MoA Engineers ESMF/RRF Woreda Dept. of Agriculture monitoring of results
There are seven aspects of the ESMF framework that can be highlighted as significant enhancements of the current institutional structure proposed for the purposes of managing the project.

1) It is proposed that an Environmental Issues Coordinator and a Social Issues Coordinator be appointed at the national level under the Project Coordination Office to be responsible for coordinating both the ESMF and the RPF. They would be responsible for coordinating the involvement of regional EPA staff. Funding would be required for the necessary training on the Environmental Review Process and the necessary operational resources.

2) The TVET and ARC Engineering Services staff will be responsible for the environmental screening of the civil works, with appropriate technical assistance and training.

3) The Regional EPA Offices will have a key function in implementing the environmental review process and overseeing the TVET/ARC clearance, which may require delegated staff for this function.

4) The Regional Bureau’s of Agriculture will be required to review and approve Form B applications for FTCs development that are submitted by the Woreda Departments of Agriculture.

5) The Woreda Departments of Agriculture will be actively involved in assisting FTCs and therefore staff will need to be dedicated to supervising training and extension activities at the proposed 15,000 FTCs in the country. The DAs, usually young and inexperienced, will need the regular support of Woreda Agriculture staff to establish their credibility with farmers. Further capacity development if this staff will be needed to ensure sufficient support for DAs.

6) FTCs will be required to prepare ‘service plans’ as per Annex 3. This is a simple operational level plan to be prepared by the DAs that expands upon the existing arrangements for staff work plans and reporting procedures. Ethiopian agriculture is characterized by a high degree of biophysical and farming systems variability that needs to be reflected in extension strategies. The FTC service plans will incorporate input from local farmers and from technical advisors in the Woreda Agriculture Department in an effort to give both professional and grassroots direction to FTC operations and DA activities. This will require some degree of capacity building for DAs to complete these plans.

7) Agricultural Research Centers should have an outreach program with selective FTCs that provides opportunities for mutually beneficial exchange and for more direct collaboration in field verification of extension packages and farmer input into research priorities.
8.2 Roles and Responsibilities

The following roles and responsibilities, many of which are directly linked to the implementation of Mitigation Measures in Table 10, are proposed as the framework for ESMF implementation:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Responsibilities</th>
<th>Capacity Development Needs</th>
</tr>
</thead>
</table>
| TVET/ARC Engineering Office, Ministry of Agriculture     | • Environmental review of civil works, with support from Regional EPA and/or external advisors; including application of Form A – Environmental Screening  
  • Development of TVET curriculum, including environmental and social concerns described in the ESMF                                                                                                                                         | • Training on completion of Form A.  
  • Technical assistance and training to TVET Engineers responsible for Civil Works in complying with ESMF at MoA, including engineering standards for FTCs |
| Extension Department MoA                                 | • Annual National workshop on extension experience and training standards for DAs and FTCs.  
  • Assistance to Ministry of Agriculture in undertaking the Environmental Review Process and Form A.  
  • Designate staff for overall monitoring and reporting on ESMF  
  • Designate staff for monitoring and reporting on RPF – Resettlement Policy Framework                                                                                                                                                | • Training on review and clearance of Form A  
  • Additional resources for EPA designated staff to oversee ESMF and RPF implementation |
| EPA Regional Offices                                       | • Develop and operate facilities consistent with Mitigation Measures  
  • Comply with Resettlement Policy Framework in any future land acquisition  
  • Examine alternative means of increasing the number of women in TVET programs  
  • Provide training in the proposed technical packages that are developed targeting the special needs of women, and the use of ecosystem based and environmentally appropriate approaches (see below)  
  • Implementation of HIV prevention and Awareness program  
  • Other: External assistance to study and initiate alternatives  
  • Orientation on ESMF and RPF by Regional EPA  
  • Other: Additional resources/materials for HIV programming  
  • Other: External assistance to study and initiate alternatives  
  • Targeted research funding for development of the new packages  
  • Other: Annual Workshop on... |
| TVET college administration and faculty                   | • Examine alternative means of increasing the number of women in TVET programs                                                                                                                                  |                             |
| Regional Bureaus responsible for TVET admissions          | • Develop new extension packages oriented to women’s needs  
  • Develop new extension packages that strengthen ecosystem based and environmentally appropriate approaches (e.g., integrated pest management, moisture retention methods, etc.)  
  • Support TVETs and Regional Bureaus of...                                                                                                                                     |                             |

72 Capacity Development Needs listed as Other are Capacity Development Needs that are external to the implementation ESMF and RPF, but are necessary for an effective project design.  
73 In some case EPA regional functions are managed by other departments
Agriculture in the verification and testing of these extension packages
- Interact with farmers on a selective basis in conjunction with FTC service plans

Regional Bureaus of Agriculture
- Orientation and preparation of TVET graduates (DA’s) for field work with Woredas and FTCs
- Oversee and monitor the extension training and services of the Woredas and FTCs
- Training on review and clearance of From B
- Other: Refresher courses on extension technologies and the Annual Workshop (see above)
- Training on completion of Form B
- Training of and transport for Woreda Agriculture Departments - training and extension staff
- Training in participatory methods and in preparation of the FTC Service Plan

Woreda Department of Agriculture
- Oversee construction of FTCs, in accordance with Guidelines for Development and Operation of FTCs
- Oversee farmer consultations as input for the FTC Service Plans
- Delegate staff responsibilities for training and extension and provide direction to DAs in the operation of the FTCs
- Assist and monitor DAs in the implementation of farmer training and extension services, including to remote farmers and those unable to travel to FTCs or those otherwise unable to participate
- Approval of FTC Service Plans

Woredas/local government
- Comply with RPF in any land acquisition for TVETs/ARCs/FTCs
- Training in participatory methods and in preparation of the FTC Service Plan

Development Agents and Kebeles
- Develop and operate FTCs in accordance and with close collaboration with the Woredas

8.3 Capacity Development Requirements for the ESMF Process

As described above, many of the implementing organizations will need capacity development in order to carry out their designated roles under ESMF. The following is a preliminary assessment of the capacity development requirements for the implementation of the ESMF/PRF. Also included are other capacity development needs related to the effective implementation of the project. All of the cost estimates are notional only and may be substantially revised once detailed proposals are developed.

8.3.1 ESMF/RPF Requirements

a) Training for TVET Engineers staff at MoA responsible for Civil Works in complying with ESMF Screening – the further development and environmental clearance of Agricultural TVETs will require some additional support to address water, waste, access roads, irrigation canals and other aspects of civil works.

Training: training course for staff to undertake site analysis and to complete Form A – TVET Facilities Environmental and Social Screening Resources: engineering assistance in review of facility designs and contracts, and development of Engineering Standards for FTCs
Notional cost est.: $40,000

The proposed Agricultural Facilities Environmental Management short course will be designed by consultants in consultation with MOA and EPA staff. It may include aspects of:
- water systems construction and operations
- waste systems construction and operations
- livestock waste management
- irrigation systems construction and operations
- agricultural chemicals storage, handling and applications
- integrated pest management for demonstration farms
- operations and maintenance manual preparation and implementation

b) Training and Capacity Building for Regional EPA to oversee ESMF and RPF implementation – the appointment of a Social Issues and Environmental Issues Coordinators at the national level to oversee the ESMF and RPF and for Regional EPA staff to undertake environmental review and clearance, and post construction monitoring.

Training: see above training
Resources necessary: transport and overhead
Notional cost est.: $50,000

c) Training for Regional Bureaus of Agriculture extension staff to oversee and ensure the appropriate mitigation measures for the implementation of the FCTs – training required to enhance capacity of staff to supervise Woreda field extension activities and the FTCs. This includes the review and approval of Form B.

Training: training course for staff to oversee and approve Form B – FTCs Facilities Environmental and Social Screening
Notional cost est.: $30,000

d) Capacity development for Woreda Departments of Agriculture training and extension staff, to assist their capacity in preparing Form B – FTCs Facilities Environmental and Social Screening. The Woredas will further oversee FTC operations and DA activities and assist then in the preparation and approve of FTC Service Plans.

Training:
- Training course for staff to undertake site analysis and complete Form B - FTCs Facilities Environmental and Social Screening;
- Training on FTC operations for Woreda staff and DAs, including farmer training, extension service delivery, and preparation of FTC service plans.
Resources: necessary transport (see monitoring costs)
Notional cost est.: $50,000

The proposed FTC Rural Appraisal and Consultation Practices short course will be designed by MOA staff in consultation with TVET social scientists and/or NGOs specialized in this area. It may include aspects of:
- How to ensure inclusion and participation of all groups in the farming society in the preparation of the FTC service plans
- How to ensure equal access to the FTC extension services
- How to ensure that the needs of farmers and other vulnerable groups are targeted in the extension services
- How to include participatory evaluation of the FTCs services
### Table 11: Summary of Estimated ESMF/RPF Capacity Development and Process Costs

<table>
<thead>
<tr>
<th>Institution:</th>
<th>Rationale:</th>
<th>Estimated Cost (5 yrs):</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVET Engineering staff at MoA</td>
<td>Training and TA - Screening of Form A – TVET Facilities Environmental and Social Screening; and development of engineering standards for FTCs</td>
<td>$ 40,000</td>
</tr>
<tr>
<td>Woreda Department of Agriculture</td>
<td>Training - Screening of Form B - FTCs Facilities Environmental and Social Screening, FTC Service Plan development and monitoring (see monitoring for logistic costs)</td>
<td>$ 50,000</td>
</tr>
<tr>
<td>Regional EPA Offices (or equivalent at regional level)</td>
<td>Training and Logistics - Review and clearance Form A - TVET Facilities Environmental and Social Screening</td>
<td>$ 50,000</td>
</tr>
<tr>
<td>Regional Bureau of Agriculture</td>
<td>Training and Logistics - Review and clearance of Form B - FTCs Facilities Environmental and Social Screening</td>
<td>$ 30,000</td>
</tr>
<tr>
<td>Total Training/Logistics Costs</td>
<td></td>
<td>$ 170,000</td>
</tr>
<tr>
<td>Social and Environmental Coordinators at the National Project Coordination Office</td>
<td>Responsible for the implementation of the ESMF (Form A and B) and the RPF, and for appropriate reporting to the Project Management Committee on ESMF implementation</td>
<td>(assuming staff secondment from government) For logistical and other support costs: $ 60,000</td>
</tr>
<tr>
<td>TVETs/ARCs and Regional EPAs</td>
<td>EA Contingency costs for significant issues that require more detailed assessment</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Total Process Costs</td>
<td></td>
<td>$ 70,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td></td>
<td>$ 240,000</td>
</tr>
</tbody>
</table>

*Note: these estimates exclude monitoring costs*

**Other Relevant Capacity Building Needs:**

(a) **Additional resources/materials to TVETs for HIV programming** – currently proposed by Curriculum Dept., Ministry of Agriculture as part of the project design. The MoA will coordinate their efforts with Ministry of Health and/or NGOs working in this area.

(b) **Targeted research funding to selected Agricultural Research Centers** - for development of the new extension packages oriented to the needs of women and vulnerable groups and packages that strengthen ecosystem based and environmentally appropriate approaches (e.g., integrated pest management, moisture retention methods, etc.)
(c) National Workshop organized by Extension Department on experiences and performance of extension technologies and practices – to be held with representatives from the Regional and Woreda levels on annual basis.

(d) Annual Workshops organized by Regional Agricultural Centers on progress in extension technologies and practices - to be held with staff from TVETs and Regional Bureaus of Agriculture on new technologies and practices, including participatory methods and gender-oriented extension strategies.

9. Monitoring Plan

The purpose of the monitoring plan is:

➢ to provide timely information about the success or otherwise of the Environmental and Social Management Framework and to alert project authorities in such a manner that changes can be made as required to ensure continuous improvement to the process;

➢ to determine the efficacy of the mitigation measures in avoiding or minimizing adverse impacts of the project and in assisting the achievement of positive social and environmental impacts of the project; and

➢ to assist the monitoring of environmental and social outcomes of the project that may be attributable to the ESMF.

9.1 Monitoring Tasks and Indicators

The following four questions and related indicators are proposed to structure the overall ESMF performance monitoring; which will be the responsibility of the Environmental Issues and Social Issues Coordinators.

1) Is the Environmental Review Process, including Form, working as planned? If not, why not?

2) Are the mitigation measures being implemented as planned? If not, why not?

3) Are the mitigation measures effective at avoiding or reducing the negative impacts to acceptable levels? If not, why not?

4) Is the FTC Review Process, including Form B, working as planned? If not, why not?

Table 12 provides a preliminary set of monitoring indicators.
<table>
<thead>
<tr>
<th>Task</th>
<th>Indicator</th>
<th>Timing</th>
</tr>
</thead>
</table>
| **A. Environmental Screening of TVET/ARCs** | - No. of persons completing the *Agricultural Facilities Environmental Management* short course  
- Participant evaluations of the short course  
- No. and quality of Form A TVET/ARC site screenings completed  
- Time required to review and clear Form A applications  
- Environmental assessment ordered for specific activities | - Course design and delivery should be prior to construction activities  
- Six-monthly collection of monitoring data |
| **B. Construction of TVET/ARC Civil works** | - Extent of integration of mitigation measures into construction documents and contracts  
- Extent of field implementation of mitigation measures by contractors  
- Effectiveness of the mitigation measures  
- Status of post construction clean up and rehabilitation  
- Operations and maintenance systems established and functional | - Monthly data collection and compilation by TVET/ARC staff |
| **C. FTC Screening and Development** | - Completion of Engineering Standards for FTCs  
- Woreda staff trained in application of screening procedures for FTCs  
- No. of FTC environmental screenings completed  
- No. of FTCs constructed and functional | - Six-monthly data collection |
| **D. FTC Operations** | - No. of Woreda staff trained in application of screening procedures for FTC Form B and service plan  
- Extent of compliance with FTC Screening Form  
- No. of persons completing the *FTC Rural Appraisal and Consultation Practices* short course  
- Participant evaluations of the short course  
- Number of farmers attending the consultations  
- Geographic representation of farmers attending the consultations  
- Farmer type representation (gender, ethnicity, economic status, vulnerable groups attending the consultation  
- Number of village groups consulted (% women)  
- Timely completion of the FTC Service Plans  
- Use of the FTC Service Plan to direct extension activities | - Continuous assistance and oversight by the Woreda staff  
- Annual monitoring of FTC Service Plan |
9.2 Monitoring Responsibilities and Reporting

Construction Reporting:
Monthly construction progress reports should be issued by the TVETs/ARCs and by the Woredas (in the case FTCs), describing the works completed and any compliance/ non-compliance issues related to the ESMF/RPF implementation at the field level. These will be submitted to the Regional BoAs for information and any necessary action.

ESMF/RPF Implementation Reporting:
The Environmental and Social Issues Coordinators will be responsible for overall monitoring and reporting to the Project Management Team on the performance of the ESMF and RPF. They will prepare six monthly reports on overall progress and experience in the implementation of the ESMF/RPF based on information and reports from Regional EPA and Regional BoA officials. The EPA and BOA staff will collect regular data on the Form A and Form B implementation processes. This level of monitoring may involve a representative sample FTC screening, clearance and construction. The Project Management Team will take corrective action as needed to ensure the ESMF/RPF are being effectively implemented.

Operational Reporting:
Standardized annual reporting, building on the existing reporting processes of the government, will be done by the TVET/ARC staff and the Woreda staff (for FTCs) on the operational aspects, including environmental management, of the facilities.

Cost Estimates from Monitoring and Reporting
TVET/ARC (approximately 30 sites visits per year @ $ 450 x 5 yrs) = $ 60,000
Woredas approx 600 x approx 1000+ cost for motorbikes/maintenance = $ 610,000 approximately

10. Consultation Plan
The purpose of the consultation plan is to ensure the participation of the Ethiopian people in national development. The Federal Democratic Republic of Ethiopia’s Environmental Policy stresses the importance “to subject all policies, programmes and projects to impact assessment in order to maximize equity for economic, ethnic, social, cultural, gender and age groups, especially the social disadvantage” and the Constitution of Ethiopia “reinforces the devolution of power and local

participation in planning, development and decision taking." With the decentralised structure of the Ethiopian administrative framework good governance is important at all levels of the government and the consultation plan is a tool in this regard, designed to create accountability, transparency and ownership of this project and to be a learning opportunity for all parties involved. The consultation plan, described below, is inclusive of all members of farming society (including vulnerable groups). Table 11 illustrates the consultation commitments of the consultation plan.

The key stakeholders in this process are:

- People likely to be displaced or adversely affected by the project (TVET land acquisition)
- The farming society / local villagers (project beneficiaries)
- Local associations (such as women groups)
- Kebele Administrations (and PAs)
- The Farming Training Centers and Development Agents
- The Woreda Administrations
- The Regional Administrations
- Local NGOs
- Other international donor agencies

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Consultative Activity</th>
<th>Institutional Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVET facility development</td>
<td>Documented consultation with affected parties; RPF consultation where land acquisition occurs.</td>
<td>TVET and Woreda / local government; regional EPA to monitor</td>
</tr>
<tr>
<td>ARC facility development</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td>FTC site development</td>
<td>Woreda and Kebele Council collaboration on FTC development</td>
<td>Woreda Dept. of Agriculture Reporting to the Regional BoA</td>
</tr>
<tr>
<td>FTC Extension Services and Training</td>
<td>Annual participatory Service Plan Development and Evaluation; DAs ongoing consultation with farmers</td>
<td>DAs under the responsibility of Woreda Dept. of Agriculture.</td>
</tr>
<tr>
<td>ARC: Extension Packages Development</td>
<td>Consult and interact with farmers in yearly FTC Service Plan workshops</td>
<td>ARC direct involvement with farmers</td>
</tr>
</tbody>
</table>
10.1 TVET/ARC Consultations

The facilities developments will be required to consult with affected parties and to report on these consultations. See Annex 1: Form A which requires reporting on public consultations. People affected by land acquisition will be consulted as per RPF requirements.

10.2 FTC Consultations

Simple Rapid Rural Appraisal methods can be used by the farming society (at the Kebele level) and the DAs to facilitate the identification their own problems and solutions, prioritise those and develop plans for content and delivery of services packages, setting indicators for success and simple ways for the evaluation of results. The process is set out in the FTC Service Plan (Annex 3).

Site Development Consultation Process;
Public consultations with the Kebele Council and the Woreda Departments of Agriculture are critical in developing a sustainable project. The site development consultation process starts with a public consultation at the Kebele level with all affected parties involved. These consultations should identify key issues and determine how the concern of all parties will be addressed. Because of the vast number of FTCs to be build (15,000), it is likely that land will be used that is currently in use by farmers. The Resettlement Policy Framework will apply to any parties that may be affected by the siting and construction of the FTCs. To ensure that appropriate public consultation mechanisms are developed the Regional Bureau of Agriculture will monitor and evaluate this function and report on the subject to the Project Coordination Unit in MoA.

Farmer participation in the FTC Extension Service Plan and Participatory Techniques to ensure inclusive representation in FTC activities process;
Each FTC will organise an annual workshop or series of small workshops for the development of the annual service plan, inviting all the different groups in the Kebele to participate. The annual workshop will serve as a base for the participatory FTC service plan development, but will just be one expression of the close interaction between the FTC DAs and the Kebele villagers. The workshop will be guided, assisted and supervised, by the responsible person at the Woreda Department of Agriculture, but is, however, meant to be run by the DAs and villagers in close collaboration. Staff from nearby TVETs and Agricultural Research Centers will be invited. The workshop may be using simple rapid rural appraisal methods to ensure high participation. Methods suitable for the FTC Extension Service Plan preparation include:

- A Village Mapping exercise that highlights the needs of the different groups in the village, including, farmer’s needs and the needs of vulnerable groups in each respective FTC / Kebele
level. The FTC annual service plan will be based on this exercise and inclusive of the groups identified.

- A Venn Diagram exercise of the people in the Kebele to paint a clear picture of which groups that exists in each Kebele, the persons active in the village and the respective group’s principle activity. (This diagram will include all groups, i.e. disabled, sick, old, youth, women, single headed households)

- Wealth Ranking Exercise to identify the resource structure in the village and to identify the groups that are vulnerable and resource scarce. These groups will be brought in focus and discussions on the needs of these groups will be included. If not, already included, practical initiatives will be made by the Kebele Council and the DAs to include representatives from these groups into the Kebele council (or PA)

- A Seasonal Calendar: to identify the annual cycle of activities of the villagers and the various villagers groups. This method also identifies seasonal difficulties (i.e. malaria strikes after rainfall at the same time as it is essential that the farmers plant their seeds).

- The results from the workshop will be kept easily accessible in the FTC, for the villagers to consult at any time (for example and if appropriate on the walls).

- The yearly workshop will start with a participatory evaluation of the year that past, with discussions on which results that failed to materialise, why and how it can be improved the coming year. Simple evaluation tables can be developed for easy participatory evaluation.

10.3 Public Disclosure of Project Documents

The ESMF and the RPF will be disclosed in Ethiopia according to its disclosure procedures, in order to be made accessible to the members of the general public and others. The Government will notify the World Bank when this has been done and allow for the disclosure of these documents in the Infoshop. The date of disclosure must comply with the Disclosure Policy (BP 17.50) and therefore precede the scheduled date for appraisal (that currently stands at March 2004).
ANNEXES

Annex 1: Form A – Agricultural TVET and Research Facilities Environmental and Social Impact Screening

Annex 2: Form B – Farmer Training Centers Environmental and Social Impact Screening

Annex 3: Draft Format for FTC Service Plan

APPENDIX 1: LIST OF CONTACTS
APPENDIX 1

List of Contacts

Mr. Sirak Alemu                      Head, ATVET, Ministry of Agriculture
Mr. Tamrat Difabachew               Head of ATVET Project Office, Ministry of Agriculture
Mr. Ibrahim Mohammed                Director of Extension and Planning Department, Ministry of Agriculture
Mr. Fekadu                          Extension and Planning Department, Ministry of Agriculture
Mr. Yiksaw Ayahem                   Director, Environmental Protection Authority
Mr. Gashaw Shibabaw                 Senior Expert in Curriculum Development, ATVET Project Office, Ministry of Agriculture
Mr. Berhane                         Training Service Delivery Unit, ATVET Project Office, Ministry of Agriculture
Mr. Abdo Mustafa                    Engineer, ATVET, Ministry of Agriculture
Mr. Bekele Bezarede                 Engineer, ATVET, Ministry of Agriculture
Ms. Monique Angers                  Director, Project Support Unit, CIDA
Mr. Ali Said                        Food Security Advisor, Project Support Unit, CIDA
Mr. Tesfay Hagos                    Head, Bureau of Agriculture and Natural Resource Management, Mekelle, Tigray
Ms. Tsige Feseha                    Regional Training and Extension Expert, Bureau of Agriculture and Natural Resource Management, Mekelle, Tigray
Mr. Amare Belay                     Director General, Tigray Agricultural Research Institute, Mekelle
Mr. Abbadi Girmay                   Director, Natural Resources Management Research, Tigray Agricultural Research Institute, Mekelle
Mr. Beyene Demtsu                   Director, Crops Research, Tigray Agricultural Research Institute, Mekelle
Mr. Bereket Haileselassie           Center Manager, Tigray Agricultural Research Institute, Mekelle
Mr. Solomon Hailu                   Head, Woreda Agriculture and Natural Resources Office, Wukro
Mr. Tesgai Hagos                    Vice Head, Development and Administration Department, Wukro, Agricultural TVET
Faculty Staff and Students          Wukro, Agricultural TVET
Doug Edwards                        Project Manager, WHIST Project, Makele (CIDA)
Residents in Abreha Atsibeha village, Tigray Region

Mr. Yisehak Baredo  Head of Alage ATVET
Mr. Ajanew Famte  Administration and Finance Department Head, Alage ATVET
Dr. Birhanu Sibihat  Animal Health Department Head, Alage ATVET
Mr. Nesibu Gelahum  Natural Resource Department Head, Alaghe ATVET
Mrs. Meselech Eyassu  Director, Addis Ababa, Woreda Urban Agriculture Office
Mr. Girma Demissie  Deputy Director, Addis Ababa, Woreda Urban Agriculture Office
Mr. Girma Kebede  Extension Supervision Officer, Addis Ababa, Woreda Urban Agriculture Office
ANNEX 1

Form A

Agricultural TVET and Research Centers
Environmental and Social Impact Screening

The purpose of the screening form is to identify the potential presence or absence of environmental and social impact concerns of the project, and the appropriate measures that may be needed to mitigate any adverse impacts. It is also intended to identify any further requirements for detailed Environmental Assessment (EA) where potential impacts require more information and analysis.

The screening form contains information that will allow reviewers at the EPA Regional Offices to determine the potential scope of impacts and mitigation measures, and socio-economic impacts that will require resettlement and compensation as per the Resettlement Policy Framework. Detailed responses to the questions may be appended to the form where required.

TVET/ARC Name/Location:____________________________________________________

Proposed Project Developments

Describe the location and type of facilities to be developed or rehabilitated:

________________________________________________________________________

________________________________________________________________________

Name of Person preparing the form:___________________________________________

Contact Information:________________________________________________________

Date:_______________________________

Signature:_________________________
PART 1: Screening Questions

New Land to be Acquired (where applicable)

1. What new land will be acquired?
2. What alternative sites are available?
3. Why has the proposed site been selected?

Existing Land Uses to be Resettled or Compensated

1. Who are the current Land Holders?
   - Names and Occupations of Land Holders
   - Type of land holdings on the site (provide a map if necessary)
   - Number of households/people involved in the land uses (farming etc.)
   - Number of households/people currently residing on the site

2. Who are the current Informal Land Users?
   - Types of Informal Land Uses on the site
   - Location of informal land users (prepare map if necessary)
   - Number of households/people involved in the land uses (farming etc.)
   - Number of households/people living on the land

3. What permanent or temporary loss of crops, fruit trees, household infrastructure or other assets will occur as a result of the project?

Site Features

1. Geotechnical Data/ Soil Types. Has a geotechnical site survey been completed? Will ground disturbance lead to soil erosion and runoff?

2. Drainage Conditions: Will the new buildings or road contribute to increased flooding? What drainage management scheme has been designed for the site?

3. Vegetation types: What vegetation exists on the site and what needs to be removed to allow site development?

4. Wildlife/ Aquatic Features: Are there sensitive habitats (e.g. wetlands, fish bearing streams important birding nesting sites etc.) that could be displaced or disturbed?
5. Culturally important features: Based on available information and site survey, is there potential for disturbing archeological, religious, or historical features?

Development Services

Water Supply
1. Community Sources: Are community water systems adequate to service projected demand?

   

2. On site sources: Ground water or Surface water. Are these sources adequate?

   

3. Potential impact of water demand: Are there sources or water uses close to the site that maybe adversely affected by development?

   

Sewage disposal and treatment
4. Existing systems: Are there capacity constraints?

   

5. New systems: Has the system been designed by a qualified engineer?

6. Potential impact of waste discharges: is there potential for contaminating ground water or surface water?

Solid Waste Management
7. Waste minimization: What systems are proposed for minimizing solid waste?

   

8. Waste disposal sites: Are there capacity constraints at the rubbish dump?

Livestock Facilities Waste Management
9. Facility design: What systems are proposed to manage wastes from livestock structures or abattoirs?

Access Roads
1. Land Uses: What existing land uses, livelihoods or people may be affected by road widening or construction?

   

2. Water Bodies: What streams, wetlands or other water bodies will be crossed or paralleled by the road construction?

   

Irrigation Canals

1. Water Sources: What is the location and quantity of the irrigation water source?

2. Water Users: What existing water users from the proposed source could be affected by the additional extraction of water?

Construction Materials

Sand, rock, fill sources: Could the project lead to degraded lands at the sources sites and what measures will be used to rehabilitate these sites?

Public Consultation

Has the public been consulted about the proposed development? If so, what consultation occurred and what comments were received?

PART II: Mitigation Measures

Standard Construction Mitigation Measures

The construction contractors will be required to incorporate environmental and social impact mitigation measures into construction documents and procedures. The following mitigation measures are proposed:

- A site survey will be undertaken prior to site preparation phase to identify any environmental or socio-cultural features that are to be protected from disturbance, and the measures to avoid such disturbance must be included in the construction documents.

- Contractors will identify an individual who will be responsible for ensuring implementation of mitigation measure at the construction sites.

- Contractors will identify the sites of any sand, rock and or fill material to be used and specify measures to be undertaken to to rehabilitate the extraction sites, and any regulation that may apply.

- Contractors will stop work and immediately notify the Regional EPA officer if archaeological, cultural or religious objectives are uncovered during site excavations.
- Contractors will take measures to minimize construction noise, dust and traffic routing inconveniences in areas where people reside.

- Accommodation for construction staff will be designed and installed in a manner that avoids local pollution or health concerns.

- Contractors will ensure that all construction personnel have been given HIV/AIDS awareness briefing and materials.

Mitigation Measures Checklist

Table 1 attached provides a general checklist of the major environmental and social concerns. In addition, Mitigation Measure may be required as determined by the designated EPA Officer following a site review of potential environmental or social impacts.

<table>
<thead>
<tr>
<th>Table 1: Facilities Construction Mitigation Measures Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mitigation Measures</strong></td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Land Acquisition &amp; Displacement of Existing Land Uses</td>
</tr>
<tr>
<td>Geotechnical and Drainage Management</td>
</tr>
<tr>
<td>Ecological Site Features Protection</td>
</tr>
<tr>
<td>Cultural Site Features Protection</td>
</tr>
<tr>
<td>Water Supply</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Engineering Standards</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>• Encourage water conservation measures and rooftop rainwater harvesting methods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waste Management</th>
<th>Have the proposed waste management facility designs approved by a qualified engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ensure that wastewater disposal systems are designed to safely treat projected waste volumes including discharge from livestock structures</td>
<td>Initiate studies on waste minimization/utilization opportunities</td>
</tr>
<tr>
<td>• Encourage waste management programmes that reduce, reuse and recycle waste in the TVET colleges, including possible biogas demonstration with livestock operations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irrigation Canals</th>
<th>Assess the availability and status of water sources for the projected irrigation volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ensure sufficient quantity and secure allocation of irrigation source water, taking into account existing water users</td>
<td>Initiate studies to conserve water in the irrigation operations</td>
</tr>
<tr>
<td>• Adoption of water conservation measures in irrigation operations and training programmes</td>
<td>Ensure malarial vector control measures within operating procedures</td>
</tr>
<tr>
<td>• Minimize stagnant water to control malaria impacts</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Construction Impacts</th>
<th>Ensure that these are discussed with the contractors and attached to contract documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Adopt the Standard Construction Mitigation Measures</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access Roads</th>
<th>See Resettlement Policy Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Avoid or minimize unnecessary disturbance to private land holdings and existing land uses</td>
<td>Identify the construction zone boundaries on the ground, and control clearing, deposition of material and runoff so as to minimize impacts on adjacent lands and waters</td>
</tr>
<tr>
<td>• Avoid or minimize disturbance to natural vegetation and adjacent streams or water bodies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures determined by Environmental Review Process</th>
<th>Implement the recommended measures in construction documents or procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Site visits, studies and review by EPA Regional staff may identify other necessary measures</td>
<td></td>
</tr>
</tbody>
</table>

|                                           | 6 |
ANNEX 2

Form B

Farmers Training Centers
Environmental and Social Impact Screening

This Form is required as part of the approval process for FTC development. The purpose is to identify the potential presence or absence of environmental and social impact concerns of the project, and the appropriate measures that may be needed to mitigate any adverse impacts. It is also intended to identify any further study requirements for where potential impacts require more information and analysis.

The screening form is to be filled out by Woreda staff and DAs. It will allow reviewers at the Regional Bureau of Agriculture to determine the potential scope of impacts and mitigation measures, and socio-economic impacts that will require resettlement and compensation as per the Resettlement Policy Framework. Detailed responses to the questions may be appended to the form where required.

FTC Name/Location:

Proposed Size of FTC site: _____ ha

Proposed Project Developments:
Describe the location and type of facilities to be developed or rehabilitated:

Name of Person preparing the form:

Contact Information:

Date:

Signature:
PART 1: Screening Questions

New Land to be Acquired (where applicable)

4. What new land will be acquired?

5. What alternative sites are available?

6. Why has the proposed site been selected?

Existing Land Uses to be Resettled or Compensated

4. Who are the current Land Holders?
   - Names and Occupations of Land Holders
   - Type of land holdings on the site (provide a map if necessary)
   - Number of households/people involved in the land uses (farming etc.)
   - Number of households/people currently residing on the site

5. Who are the current Informal Land Users?
   - Types of Informal Land Uses on the site
   - Location of informal land users (prepare map if necessary)
   - Number of households/people involved in the land uses (farming etc.)
   - Number of households/people living on the land

6. What permanent or temporary loss of crops, fruit trees, household infrastructure or other assets will occur as a result of the project?

Site Physical Features

1. What types of soils, vegetation and aquatic features (streams, wetlands, lakes) currently exist on the site?

2. Is there any evidence of land instability or flooding on or adjacent to the site?

Site Cultural Features

Based on available information and site survey, is there potential for disturbing archaeological, cultural or religious artifacts or features?
Buildings and Services Engineering Standards

1. Do the proposed buildings and structures conform to Ministry Agriculture design standards for FTCs and their related services (water, waste, electricity)? Yes _____ No _____

2. If Not, why not? ____________________________________________________________

3. If Yes, how will these standards be complied with during construction? _______________ 

4. Is there potential for negative impact on ground water or surface water sources for existing nearby water users? ________________________________

Demonstration Practices Environmental Standards

What agricultural demonstration areas are proposed on the FTC site and how will they be used?

Construction Materials

Sand, rock, fill sources: Could the project lead to degraded lands at the sources sites and what measures will be used to rehabilitate these sites? __________________________________________

Public Consultation

Has the public been consulted about the proposed development? If so, what consultation occurred and what comments were received? ________________________________

PART II: Mitigation Measures

Standard Construction Mitigation Measures

The construction contractors will be required to incorporate environmental and social impact mitigation measures into construction documents and procedures. The following mitigation measures are proposed:
o A site survey will be undertaken prior to site preparation phase to identify any environmental or socio-cultural features that are to be protected from disturbance, and the measures to avoid such disturbance must be included in the construction documents.

o Contractors will identify an individual who will be responsible for ensuring implementation of mitigation measures at the construction sites.

o Contractors will identify the sites of any sand, rock and or fill material to be used and specify measures to be undertaken to rehabilitate the extraction sites, any regulation that may apply.

o Contractors will stop work and immediately notify the Regional EPA officer if archaeological, cultural or religious objectives are uncovered during site excavations.

o Contractors will take measures to minimize construction noise, dust and traffic routing inconveniences in areas where people reside.

o Accommodation for construction staff will be designed and installed in a manner that avoids local pollution or health concerns.

o Contractors will ensure that all construction personnel have been given HIV/AIDS awareness briefing and materials.

**Mitigation Measures Checklist**

Table 1 attached provides a general checklist of the major environmental and social concerns. In addition, Mitigation Measure may be required as determined by the designated EPA Officer's following a site review, and assessment of environmental or social impacts.
<table>
<thead>
<tr>
<th>Facilitates Construction Mitigation Measures Checklist</th>
<th>Mitigation Measures</th>
<th>Applicability</th>
<th>Proposed Action, if Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Acquisition &amp; Displacement of Existing Land Uses</td>
<td>• Identify alternative lands to avoid displacements of existing occupants and uses.</td>
<td>Yes</td>
<td>See Resettlement Policy Framework</td>
</tr>
<tr>
<td></td>
<td>• Comply with Resettlement Policy Framework with regards to unavoidable displacement of existing occupants and uses.</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Geotechnical and Drainage Management</td>
<td>• Identify particular geotechnical and drainage issues and select siting and designs that minimize risks</td>
<td>Yes</td>
<td>Ensure appropriate geotechnical study, and establish a drainage management scheme</td>
</tr>
<tr>
<td></td>
<td>• Ensure that a qualified engineer has approved facility designs</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Ecological Site Features Protection</td>
<td>• Identify particular ecological or aquatic/terrestrial habitat concerns and select siting and designs that minimize adverse effects</td>
<td>Yes</td>
<td>Ensure appropriate study of sensitive features, and adjust construction plans to minimize disturbance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Cultural Site Features Protection</td>
<td>• Identify particular cultural or archaeological potential and select siting and designs that minimize adverse effects</td>
<td>Yes</td>
<td>Ensure appropriate study of sensitive features, and adjust construction plans to minimize disturbance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Water Supply</td>
<td>• Ensure that the water sources and supply systems are able to accommodate projected demand of the TVET/ARC</td>
<td>Yes</td>
<td>Undertake studies of water supply capacity and where required, prepare new infrastructure capital development plans</td>
</tr>
<tr>
<td></td>
<td>• Ensure that water systems are designed and installed in a manner that meets approved engineering standards</td>
<td>No</td>
<td>Initiate studies into water conservation and rainwater harvesting opportunities</td>
</tr>
<tr>
<td></td>
<td>• Encourage water conservation measures and rooftop rainwater harvesting methods</td>
<td></td>
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<td>• Encourage waste management programmes that reduce, reuse and recycle waste in the TVET colleges, including possible biogas demonstration with livestock operations</td>
<td>No</td>
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| **Irrigation Canals** | • Ensure sufficient quantity and secure allocation of irrigation source water, taking into account existing water users  
  • Adoption of water conservation measures in irrigation operations and training programmes  
  • Minimize stagnant water to control malaria impacts | Assess the availability and status of water sources for the projected irrigation volumes  
  Initiate studies to conserve water in the irrigation operations  
  Ensure malarial vector control measures within operating procedures |
| **Construction Impacts** | • Adopt the **Standard Construction Mitigation Measures** | Ensure that these are discussed with the contractors and attached to contract documents |
| **Access Roads** | • Avoid or minimize unnecessary disturbance to private land holdings and existing land uses  
  • Avoid or minimize disturbance to natural vegetation and adjacent streams or water bodies | See Resettlement Policy Framework  
  Identify the construction zone boundaries on the ground, and control clearing, deposition of material and runoff so as to minimize impacts on adjacent lands and waters |
| **Measures determined by Environmental Review Process** | • Site visits, studies and review by EPA Regional staff may identify other necessary measures | ✓ Implement the recommended measures in construction documents or procedures |
ANNEX 3

FTC Service Plan

1. Introduction

The purpose of the FTC Service Plan is to provide clear direction for the annual activities of the FTC based on the needs of the farmer groups in the Kabele. It is intended to encourage participation from a variety of different farmer groups in the activities of the FTC. This involvement is crucial to promoting the FTC as a farmer-based organization that serves all of the farmers in the area.

The DAs will be responsible for producing the Service Plan under the direction and assistance of the Woreda. The plan will provide direction for FTC activities in meeting the priorities of farmers as well as assisting the follow-up evaluation of the effectiveness of the training and extension work.

The Service Plan will be approved by the Woreda and will guide the DAs in their individual programs in farmer training and extension advisory services.

Training in participatory methods and the preparation of the FTC Service Plan will be provided by the Rural Capacity Building Project as part of the Woreda capacity development component of the project.

2. FTC Service Plan Process

FTC Service Plan Process Steps

Step 1: Preliminary Discussions with Farmer Groups

DAs will identify the different farmer groups in the Kebele and undertake initial introduction at the FTC work planning task. The groups to be identified could for example be irrigated/rainfed land farmers, household/women farmers, pastoralists and marginal farmers.

Step 2: Farmer Consultation Methods

DAs will hold meetings with individual farmer groups to identify what the farmers perceive as the major constraints and the possible solutions for each of the identified constraints. For each farmer group meeting held, the service plan list of participants and the matrices will be filled out. In these discussions the DAs may use a range of simple PRA techniques to ensure the utmost possible participation from the farmers. The DA will take the role of a facilitator, whose role is to listen to the farmers, to courage the group members to speak and to facilitate the discussion. The DA will fill out the service plan template during the exercise.

The DA starts the discussion with explaining the purpose of the exercise and then lets the group discuss freely around what they feel their largest constraints are. The DA should not participate in the discussion, but keep a low profile. The discussions may include the following/or other relevant topics:
i) Crops
ii) Livestock
iii) Natural Resources (water, fuel wood)
iv) Household Responsibilities (collecting fuel wood, water etc.)

Figure 1: FTC Service Plan Process

Preliminary Discussions with Farmers Groups

Farmer Consultation
- Constraints
- Solutions
- Priorities
- Ext. services
- Indicators

ARC: interacting with farmers and undertaking technology verification

Document Preparation

Draft Service Plan Approval

Woreda Department of Agriculture

Final Service Plan Presentation
Once the group has identified the biggest constraints the DA will ask them to rank the problem in order of importance (if the group does not agree, voting within the group can be considered. The DA should not vote). The list of constraints/problems (1-5) should be documented by the DA using Matrix B of the service plan template.

The DA will then ask the farmers to discuss the possible solutions of the identified problems. These discussions should include traditional ways of resolving these problems as well as new techniques explained by the DA. A possible solution (minimum one) should be agreed upon by the farmers for each of the problems. These discussions may include advantages and disadvantages with the new technologies/traditional technologies as well as possible underlying reasons for why certain techniques are not of interest for the farmers. The DA will document the results accordingly.

The next step of the group exercise will take the form of a discussion by the farmers on how the extension results can be measured and how well the solutions/new techniques are functioning.

The last step of the discussion meeting entails the planning of the delivery of the extension service for the coming year. Matrix A can be used as a basis for this dialogue with the farmers and will review of their satisfaction, frequency and timing of the extension agents visits to the farmers as well as the intended target groups, and what extension services to be delivered in the forthcoming year (based on the above discussion e.g. Matrix B).

**Step 3: Document Preparation**

DAs will prepare the FTC Service Plan that identifies the priorities and needs of the farmer’s discussions, as described above. The plan will need to carefully allocate the available FTC resources (staff time and funding) in a manner that: (a) balances the needs of different farmer groups (applying “equal access to services” approach), (b) recognises the factors that are limiting agricultural production in the area and (c) makes the best use of available resources.

**Step 4: FTC Service Plan Approval**

DAs will submit the draft service plan approval to the Woreda Agricultural Department for approval.

**Step 5: Public Presentation of FTC Service Plan**

DAs will communicate the final plan to the Kebele and to the farmer groups. The plan will also be available to the public at the FTC.
# Record of Participants

<table>
<thead>
<tr>
<th>Planning for Year:</th>
<th>Name of DA:</th>
<th>Region:</th>
<th>Zone:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Woreda:</th>
<th>Kebele:</th>
<th>Name of DA:</th>
<th>Name of FTC:</th>
<th>Name of Group:</th>
<th>Names of group participants:</th>
<th>Main occupation of participant:</th>
<th>Gender of participants:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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| 2       |         |             |              |               |                             |                            |                      |
| 3       |         |             |              |               |                             |                            |                      |
| 4       |         |             |              |               |                             |                            |                      |
| 5       |         |             |              |               |                             |                            |                      |
| 6       |         |             |              |               |                             |                            |                      |
| 7       |         |             |              |               |                             |                            |                      |
| 8       |         |             |              |               |                             |                            |                      |
| 9       |         |             |              |               |                             |                            |                      |
| 10      |         |             |              |               |                             |                            |                      |
| 11      |         |             |              |               |                             |                            |                      |
| 12      |         |             |              |               |                             |                            |                      |
| 13      |         |             |              |               |                             |                            |                      |
| 14      |         |             |              |               |                             |                            |                      |
| 15      |         |             |              |               |                             |                            |                      |
| 16      |         |             |              |               |                             |                            |                      |
| 17      |         |             |              |               |                             |                            |                      |
| 18      |         |             |              |               |                             |                            |                      |
| 19      |         |             |              |               |                             |                            |                      |
| 20      |         |             |              |               |                             |                            |                      |
### MATRIX A – PLAN COMPONENTS

<table>
<thead>
<tr>
<th>EXTENSION ACTIVITIES (what)</th>
<th>TARGET GROUPS (to whom, men/women)</th>
<th>MEANS OF DELIVERY (how)</th>
<th>SCHEDULE (when)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock health check</td>
<td>Households in village 1, 2, 3 etc.</td>
<td>Mobile veterinary clinic</td>
<td>(appropriate timing)</td>
</tr>
</tbody>
</table>
## MATRIX B – IDENTIFYING FARMERS’ NEEDS

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>CONSTRAINTS</th>
<th>SOLUTIONS</th>
<th>INDICATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes women’s problems, credit, lack of technologies etc.</td>
<td>• Soil fertility enhancement</td>
<td>• Improved yields</td>
</tr>
<tr>
<td>CROPS</td>
<td>• E.g. low yields</td>
<td>• Increased use of fertilizer</td>
<td></td>
</tr>
<tr>
<td>LIVESTOCK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATURAL RESOURCES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOUSEHOLD DUTIES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>