**Document of the Inter-American Development Bank**



**GUYANA**

**Sustainable Agricultural Development Program**

**(GY-L1060)**

**Environmental and Social Management Report**

**(ESMR)**

August 2016

This document was prepared by Rachel Atkinson (VPS/ESG) as part of an integrated project team comprising: Co–Team Leaders: Juan de Dios Mattos (CSD/RND) and Sybille Nuenninghoff (RND/CBL); Team Members: Onil Banerjee (CSD/RND); Jamie Cotta (CSD/RND); Derise Williams (CCB/CGY); Emilie Chapuis (FMP/CGY); Paula Louis–Grant (FMP/CGY); Escarlata Baza (LEG/SGO); David Cotacachi (SCL/GDI);; Maja Schling (SPD/SDV); Claudia Stevenson (IFD/CTI); and Lisa Restrepo (CSD/RND)

**Table of Contents**

1. Introduction
2. Summary Table
3. Project Description
4. Key Components of the project
5. Environmental and Social Setting
6. Project Schedule and Workforce
7. Alternative Analysis
8. Compliance Status and Project Standards
9. Environmental and Social Appraisal Process
10. IDB Policies and Directives
11. Project Standards and Requirements
12. Key Environmental and Social Impacts, Risks and Mitigation
13. Negative Environmental and Social Impacts, Risks and their Mitigation during Construction
14. Negative Environmental and Social Impacts, Risks and their Mitigation during Operation
15. Cumulative Impacts
16. Natural Disasters Risks
17. Key Positive Environmental and Social Impacts
18. Management and Monitoring of Environmental, Social, Health and Safety and Labor Impacts and Risks
19. Description Of Management Systems And Plans
20. Monitoring and Supervision
21. Environmental and Social Safeguard Performance Indicators
22. ESMP budget
23. Requirements to be Included in the Legal Documents
24. Throughout the Life of the Loan
25. Prior to the bidding of each works in the program
26. Prior to the initiation of the agricultural research and training activities

## LIST OF ACRONYMS AND ABBREVIATIONS

ASDU Agriculture Sector Development Unit

EA Environmental Assessment

EPA Environmental Protection Agency

ESA Environmental and Social Analysis

ESMR Environmental and Social Management Report

ESMP Environmental and Social Management Plan

GLDA Guyana Livestock Development Authority

GMO Genetically Modified Organism

IUCN International Union for Conservation of Nature

NAREI National Agricultural Research and Extension Institute

MoA Ministry of Agriculture

RLPA Rupununi Livestock Producers Association

SPS Sanitary and PhytoSanitary Standards

1. **INTRODUCTION**

|  |  |
| --- | --- |
| * 1. **Summary Table** | |
| Country | | Guyana | |
| Sector | | Agriculture and Rural Development (CSD/RND) | |
| Project Name | | Sustainable agricultural development program | |
| Borrower and / or Sponsor | | Co-operative Republic of Guyana | |
| Executing Agency | | Ministry of Agriculture | |
| Total Project Cost (in US Dollars) | | US$15 million | |
| Financial plan | | IBD (OC): US$7.5 million and IDB (FSO): US$7.5 million | |
| Environmental Category | | B | |

1. **PROJECT DESCRIPTION**
2. **Key Components of the project** 
   1. The objective of the loan is to increase the productivity of the agricultural sector while maintaining sustainable use of natural resources in Guyana. The main beneficiaries of the Program will be farmers of Regions 5 (Mahaica-Berbice), 9 (Upper Takutu- Upper Essequibo) and 10 (Upper Demerera-Upper Berbice) as shown in Figure 1. They include indigenous peoples and women. The Ministry of Agriculture (MoA) and its agencies will also receive training, capacity building and support for research.
   2. The main components of the Program are:

* **Component 1**: Baseline information for policy making and natural resource management (US$4.17 million) via the funding of a nationwide agricultural census.
* **Component 2**: Strengthening of the agricultural innovation and extension system (US$6.39 million). This component will finance the upgrading of an agricultural centre in Region 10 and the construction of a new research centre in Region 9, the implementation of a research program in Regions 9 and 10, and an extension strategy tailored to the different groups of beneficiaries. The main activities to be financed are:

1. Design and construction of an agricultural center in Region 9;
2. Design and construction of a water reservoir for the agricultural center in Region 9. This reservoir will be approximately 660 hectares that will facilitate irrigation and livestock research in the agriculture center in Region 9;
3. Design and upgrade of facilities in Region 10 to implement a fully functional agricultural center in Ebini, including building upgrade, water harvesting from the roof of the centre, road access and storage;
4. Implementation of soil laboratories in both Region 9 and Region 10 for research purposes;
5. Implementation of five research programs in each agricultural center focused on cassava, peanuts, orchards, livestock (cattle and small ruminants), and pasture;
6. Preparation and implementation of an extension strategy that will include incentives for technology adoption for small farmers (up to USD 500 per farmer to cover up to 70% of the cost of the technology package). An operating manual will detail the process to identify and implement the incentives strategy.

* **Component 3**: Support for compliance with sanitary and phytosanitary standards (US$ 2.8 million). This component comprises:

1. Development and implementation of a simplified grading system for beef that compensate livestock owners for the quality of their beef animals;
2. Update of abattoir standards and preparation of legal framework;
3. Technical assistance for the adaptation of the International Codex Alimentarius to the Guyana context;
4. Support to the Guyana Livestock Development Authority (GLDA) to enforce standards;
5. Technical assistance for the preparation of regulations pertaining to the new Food Safety Act and the new Animal Welfare Act to ensure the humane transportation and slaughter of food animals;
6. Financing of two abattoirs (one in Region 9 and one in Region 5), that will include infrastructure for processing and waste management, and equipment;
7. Training of GLDA staff in meat inspection, effective enforcement and audit; and members of selected producers associations members in management; standards; best practices; and environment protection;
8. Strengthening of the producers associations to enhance abattoir management.
   1. This ESMR only considers the new infrastructure (agricultural centre, water reservoir and abattoir in region 9, and the contents of research and training courses. The abattoir in region 5 is not included in this document as this was a last minute adjustment by the MoA and to date there are no details of its location.



**Figure 1: Location of project activities.** The project will work in three regions (5, 9 and 10). The new infrastructure will be constructed in region 9 (the agricultural centre and water catchment reservoir are to be constructed near to Lethem the abattoir on the edge of Lethem). The agricultural centre that will be upgraded is located in region 10 at Ebini. The site of the abattoir proposed for region 5 remains unknown.

1. **Environmental and Social Setting**
   1. The new infrastructure will be located in Region 9, the largest in the country borders with Brazil to the west and south. The region is dominated by the Rupununi ecosystem that encompasses a rift valley of 5,000 square miles of natural savannas and wetlands, divided into two near equally sized parts by the forested Kanuku Mountains. The savannahs are mostly open, hot and dry ecosystems shaped by frequent and regular fires with very distinct and extreme flooding and drought seasons. Rocky outcrops and isolated mountains form an important part of the savannah, examples include Kusad Mountain, Saddle Mountain, and Shiriri Mountain. Large parts of the savannah drain into the rivers Takatu, Ireng and Rupununi which are bordered by gallery forests. The Rupununi is one of the last true wilderness areas in the world.
   2. Socioeconomic context: The Rupununi is a home to and a source of livelihood for some 5,000 Amerindian households who own 27% of the land and make up 93% of the population. Households generate low annual incomes (up to US$ 850 per hectare per year, with between 1 and 20ha) and have a strong dependence on natural resources to meet their needs. The three most important economic activities at a household level are 1) agro- processing, 2) crop production, and 3) paid labor that accounts for 78% of cash income in the area. However, many households (60%) still engage in traditional activities such as hunting, fishing and gathering. Women are increasingly taking up leadership roles in households as the men leave to look for work and are contributing significantly to the household’s economy. However, women in agriculture suffer discriminatory practices that cause economic and social disadvantages. The main foods consumed in the Rupununi are cassava and fish. Households use firewood to cook food including the main staple, farine. Natural gas is also used. The region has remained free of development due to its isolation. However, National Policy continues to view the Rupununi as an area for economic expansion. With improving accessibility, beginning with a road from Georgetown 20 years ago, a bridge across the Takatu River to Brazil in the past five years, and the promise of the paving of the road from the Region’s capital Lethem (Brazil border) to Linden over the coming five years there is increasing interest in the region for gold mining, petroleum extraction, and large-scale agriculture. These proposed investments have yet to materialize, but are already threatening the spectacular wildlife and natural habitats of the Rupununi, as well as traditional ways of life of the communities.
   3. Agricultural context: In addition to subsistence farming, the predominant agricultural activity has been cattle rearing on natural pastures. Although the total herd population has dwindled to 13,000 from a reported high of 80,000 in the 1970s, there is still a sense that beef ranching remains the main culture of the population. The Rupununi Livestock Producers Association (RLPA) appears to be the most vibrant agricultural producer association and its 60 -70 members are beef and small ruminant producers. The vision statement by the Integrated Sustainable Agriculture Development Strategy for Region 9 (2015-2020) is ‘by 2020 the Rupununi Region is integrated into national value added agricultural production and market systems while maintaining ecosystems integrity, enhancing food security and the welfare of the people in the region, and substantiating local customs, traditions and culture’.
   4. Biodiversity and ecosystem services: The Rupununi Savannah is one of Guyana’s most unique and diverse ecosystems and among the last great wilderness areas on earth with a level of species richness similar to western Amazonia. It is home to over 9,000 species, including over 2,000 vertebrates and many species that are highly endangered globally. This high diversity is the result of mixing of Amazonian and Guiana Shield fauna; extremely diverse and closely packed habitats; and marked seasonal variability, including extensive flooding.. Increasing interest in the region for gold mining, petroleum extraction, and large-scale agriculture is beginning to threaten the spectacular wildlife and natural habitats of the Rupununi.
   5. Disaster risk and Climate resilience: The Rupununi naturally experiences severe flooding and droughts. Climate change is changing the cycles to more extreme and longer drought periods, and a shorter heavier rainy season. While the population is used to severe climatic conditions, there is a need to be able to adapt to the new pressures resulting from climate change.
   6. Protected areas: The Rupununi is considered of high importance for biodiversity conservation. There has been effort to have the North Rupununi wetlands recognized nationally as a protected area but to date official protection has not been given. The Kanaku mountains protected area was created in 2011 and protects 611,000 ha of the forested mountains that divide the North and South Rupununi. This is considered as an International Union for Conservation of Nature (IUCN) category VI protected area. It falls outside of the land that is the focus for this project.
2. **Project Schedule and Workforce**
   1. The executing unit for the project is the Agriculture Sector Development Unit (ASDU) with an execution period of six years. As funding for the design of the infrastructure is part of this loan, details of the design have not yet been carried out and the necessary permits including the environmental license to begin construction are still to be obtained. It is expected that construction will begin at the earliest in 2018 while training will being in late 2017.
   2. The new constructions are small and workforce will be sourced locally. There will be no worker camps.
   3. The new constructions are on government land that needs to be transferred to the MoA before the works can begin.
3. **Alternatives Analysis**
   1. The exact sites for the infrastructure depend upon allocation of Government land to the Ministry of Agriculture.
   2. For the abattoir in Region 9 three alternatives were analyzed and one selected based on its closeness to Lethem, water and electricity availability and road access. The site is not near any settlement.
   3. Four sites were considered for the agricultural centre in Region 9 and the favoured site is near to Manari about 10 miles north of Lethem where there is water and electricity.
   4. Potential sites for the abattoir in Region 5 have not been provided to date but will also be placed on government land.
4. COMPLIANCE STATUS AND PROJECT STANDARDS
5. Environmental and Social Appraisal Process

3.1 An Environmental and Social Analysis and Management Plan was carried out with a draft presented to IDB prior to the analysis mission in August 2016. This document will be made publically available prior to Bank approval.

3.2 The Environmental Protection Act of 1986 lays out in Part IV the legal process of obtaining and environmental license via the Environmental Impact Assessment. The Environmental Protection Agency (EPA), under the Ministry of the Presidency is responsible for enforcement of this act. The Environmental Protection Regulation was gazetted under this act in 2000 and contains regulations on water quality, air quality, and hazardous waste management as well as measures to prevent pollution.

3.3 The firm contracted by ASDU for the design of the infrastructure will also be responsible for the development of the Environmental and Social Assessment mandated by Law. They will also contract an environmental technician who will be responsible for ensuring health, safety and environmental standards are met.

3.4 The EPA will be responsible for providing an environmental license for the new infrastructure as well as ensuring that the facilities do not pollute water during the operation phase.

3.5 Regulations for the management of abattoirs are lacking and will be developed under component 3 of this program.

1. IDB Policies and Directives

3.6 The Project triggers the following directives of IDB’s OP-703 Environmental and Safeguards Policy: B.1, Bank Policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.4, Other risk factors; B.5, Environmental Assessment Requirements; B.6., Consultations; B.7, Supervision and Compliance; B.9 Natural Habitats and Cultural Sites; B.11 Pollution Prevention. The OP-765 Indigenous Peoples Policy and OP-102, Disclosure of Information Policy also applies for this Project. No physical or economic resettlement will occur in relation to the Project. The Project has been classified by the Bank as a Category B operation with Moderate disaster risk.

Table 1, below, illustrates the Project’s capacity to comply with IDB’s various policies and directives.

**Table 1: Project Compliance information**

|  |  |  |
| --- | --- | --- |
| **Policy / Directive** | **Compliance status** | **Actions required to ensure compliance throughout the project** |
| **OP-703 Environmental and Safeguards Compliance** |  |  |
| **B.1 Bank Policies** | **Expected to be met** | The proper implementation of the various programs and mitigation measures described in the ESMP will ensure the project remains in compliance. |
| **B.2 Country laws** | **Expected to be met**: The project is expected to comply with B.2 as the EIA process will be followed for all new infrastructure. Compliance with national regulations regarding Health and Safety and pollution will also be assured through monitoring by the EPA. | EIA and Environmental License submitted to the Bank, Monitoring reports submitted to the Bank every three months during construction. |
| **B.3 Screening and Classification** | **Requirements met**: The Project has been screened using the Bank’s toolkit and has been classified as a Category B operation. |  |
| **B.4 Other risk factors** | **Requirements met**:  Inadequate local capacities (government and communities) to manage the potential negative impacts during construction and operation will be improved through training in the early stages of this project. Training will also be provided to ensure agricultural extension programs focus on sustainable agriculture | Monitoring of training to build capacities in government and local community groups. The project will submit training and research program content for approval by the Bank. |
| **B.5 EA Requirements** | **Expected to be met**: An EA was prepared for the project but lacks detail about infrastructure in Region 5. An EA for infrastructure in Region 5 will be carried out. In addition, under Guyanese legislation, all new infrastructure will require an EIA. | EA for Region 5 will be submitted prior to Board approval EIAs will be prepared for all infrastructure, and an Environmental License obtained as a condition prior to construction. |
| **B.6 Consultations** | **Expected to be met**: Project has undergone appropriate public consultation in Region 9, but not Region 5. A consultation will be carried out for Region 5 prior to Board approval | Submission of report from Public Consultation in Region 5 |
| **B.7 Supervision and Compliance** | **Requirements met** | The Project will submit quarterly compliance reports during construction and annual compliance reports during operation to the Bank. More frequent supervision by the Ministry of Health will be carried out during operation of the abattoirs. |
| **B.9 Natural Habitats and Cultural Sites** | **Expected to be met**: The project site (Region 9) is Critical Natural Habitat, but conversion will not be significant. However there is a risk of cumulative impacts. Training and research programs will be designed to ensure focus sustainable agricultural methods (including prohibiting use of invasive species). | The project will submit training and research program content for approval by the Bank |
| **B.11 Pollution Prevention** | **Expected to be met**: The abattoirs will be built to international standards, and operators will receive training and regular auditing by government and external consultants to ensure there is no significant pollution. | The project will submit plans for approval to the Bank. Reports on training courses and from external auditing will also be submitted. |
| **OP-704 Disaster Risk Management Policy** | **Expected to be met**: Adequate design will ensure infrastructure is not prone to flooding. Agriculture is also at risk from climate change. The project aims to build resilience to climate change and natural disasters through promotion and adoption of adaptive technologies to reduce risk of losses and increase food security. | The project will submit plans for approval to the Bank. The project will submit training and research program content for approval by the Bank. |
| **OP-270 Gender Equality** | **Expected to be met**: Women will be actively included in training programs, technology packages and in the management of the abattoir. | Monitoring of the inclusion of women in these programs. |
| **OP-765 Indigenous Peoples Policy** | **Requirements met**: The Amerindian community will benefit directly from this project through training and technology packages. |  |
| **OP-102 Access to Information Policy** | **Requirements met**: The ESMR, EA and ESMP will be made available on the IDB website. | Monitoring of the website for availability of information. |

1. Project Standards and Requirements
   1. The Project will follow a project-specific ESMP. The ESMP outlines the Borrower’s environmental and social responsibilities including waste management, health, safety and labor, monitoring and auditing.
   2. The company awarded the tender will carry out the Project according the Guyanese Law and the Environmental and Social Management Plan (ESMP). The contractor shall be responsible to hire an environmental officer to ensure the effective implementation of the ESMP.
   3. The project will be monitored during construction and operation by EPA. In addition for the abattoirs, the Ministry of Health and an international inspector to ensure facilities reach and maintain international standards throughout operation.
   4. Agricultural extension programs and research at the agricultural facilities will follow details laid out in the project operations manual to ensure they are linked to sustainable agriculture.
2. ENVIRONMENTAL AND SOCIAL IMPACTS, RISKS AND MITIGATION
3. Negative Environmental and Social Impacts and Risks and their Mitigation during Construction
   1. Due to the small scale of the infrastructure being built, this project has few significant risks, and it will be possible to mitigate all of the direct impacts. In addition many of the mitigation actions have already been addressed as key aspects of the project design.
   2. The key environmental risks are flooding of new infrastructure, the sourcing of a reliable water supply for the abattoir and the risk of damage to the creek through construction of a water catchment for the agricultural centre in Region 9. These risks will be avoided through adequate design of the infrastructure, the digging of a well specifically for the abattoir and a study to better understand the impact of the reservoir construction that should be included in the EIA for the agricultural centre.
   3. There is also the risk that an inadequate design for the abattoir could result in issues of animal welfare, inadequate water and energy supply water pollution from abattoir waste. These will be dealt with by insuring the design complies with international standards.
   4. The standard risks associated with the construction of any infrastructure also apply to this project. These will be avoided through employment of an environmental officer by the construction firm, supervision of the works by ASDU, and independent assessment by EPA.
4. Negative Environmental and Social Impacts and Risks and their Mitigation during Operation
   1. Weak institutional capacity to monitor the operation of facilities, in particular the abattoir could result in localized pollution, poor animal welfare and sanitary issues related to meat production. This will be mitigated by training of the producers association in abattoir operation, training inspectors from the Ministry of Health and EPA, as well as an annual audit from an international inspector to ensure meat meets a suitable hygiene standard.
   2. Agriculture in the region is at risk from natural disasters and climate change. The project has incorporated into its research and training programs the promotion and adoption of technologies to adapt to climate change to reduce the risk of losses and increase food security.
   3. Key social risks are a lack of inclusion of indigenous people and women in the training program. This will be mitigated through training of NAREI staff in techniques to ensure their inclusion, and to offer courses of relevance to these groups.
   4. Key indirect impacts arise from the promotion of techniques that could result in ecosystem damage to the Rupununi in the short or long term. This will be mitigated partially by ensuring that research and extension programs focus on sustainable agriculture and do not promote invasive species, including Genetically Modified Organisms that are invasive, crops with high dependence on pesticides and herbicides or water.
5. Cumulative impacts
   1. The new facilities and training program are just one of many factors needed to encourage wide-scale agriculture in Region 9. Other factors include plans to pave the Georgetown-Letham road, and development of better marketing and supply chains. These factors could lead to a wide-scale negative impact in the wilderness region. This could be mitigated through supporting the creation of a protected area in the Rupununi. It is anticipated that the Government will request a Technical Cooperation for a participatory process to develop a regional plan to help ensure sustainable development of this area, including the designation of a protected area.
6. Key Positive Environmental and Social Impacts
   1. The expected principal results of the Program are: i) higher private investment in the agricultural sector; ii) an agricultural census implemented; iii) higher productivity at the farm level; iv) higher value of products processed by pilot facilities; and v) increase in the use of practices that reduce pressure on ecosystems.
   2. The positive social impacts include training, extension services and financial incentives for farming for the Amerindian population, training of the producers association to improve quality of meat processing in the new abattoir, and research into crops that may provide better resilience against climate change.
   3. Positive environmental impacts include better handling of abattoir waste and a focus on the development of techniques for sustainable agriculture.
7. Associated facilities
   1. There are no facilities associated directly with this project.
8. Natural Disaster Risks
   1. The project does not exacerbate natural disaster risk, however given that the region is prone to flooding, there is a need to site the new infrastructure accordingly. Agriculture in the area is very vulnerable to flooding and drought. The program also aims to increase agricultural resilience to farmers in the area by researching new varieties and crops and promote new technologies and practices that will increase resilience of agriculture to natural disasters and climate change. This project. The project has been classified as moderate risk.
9. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS
10. Description of Management Systems and Plans
    1. A project-specific Environmental and Social Management Plan (ESMP) has been prepared as part of the Environmental and Social Analysis (ESA) with the overall objective of preventing and minimizing project related impacts. This plan contains a set of obligatory activities which must be implemented by the contractor and all subcontractors.
    2. The most significant project impacts can be mitigated through an adequate design of the facilities. This will be addressed through ensuring that the design meets international standards as assessed by a consultant in collaboration with ASDU and EPA.
    3. Other impacts relate to operation of the facilities. These will be addressed through training programs to abattoir operators and supervisors, as well as regular external auditing.
    4. The operation manual for research and training courses must state that that invasive species (including Genetically Modified Organisms that are invasive), crops requiring high herbicide and pesticide use and crops or livestock with high water demand must not be researched or promoted during the project.
    5. The most relevant social activities implemented by the Borrower to develop a good relationship with the local communities include:

* Public Consultations. The Project has already conducted a public consultation meeting on the ESA on August 18th 2016 in Lethem attended by representatives of diverse stakeholder groups. Details of this meeting are presented in an annex of the the ESA. The consultation provided an opportunity for interested people to learn about the project and express their doubts and concerns which were addressed by company representatives. Community engagement will continue through the construction and operating phase as much of the project involves training and capacity building for local farmers and livestock owners.
* Grievance Mechanism. A grievance mechanism will be put in place via the community steering committee. This will allow stakeholders to voice their opinions, concerns, complaints, or comments outside of the public consultation meetings and throughout the construction and operation phase of the project to ASDU. Grievances will be addressed first through discussions between the affected persons and the ASDU. If consensus is not agreed, a mediator will be appointed from an agreed list of suitable persons, and finally if parties fail to concur, the matter may go through the courts.

1. Monitoring and Supervision
   1. This project includes different levels of supervision, both internal and external. Internally, the contractor shall have an environmental officer to provide oversight to environmental, social, health and safety issues in accordance with the site-specific ESMP developed by the contractor and report directly to ASDU.
   2. EPA shall be responsible for ensuring the design and construction meets national requirements. The EPA is about to open an office in Region 9 to ensure better supervision of the facilities and the Rupununi in general. During the operational phase, monitoring of the abattoirs shall be carried out by the Ministry of Health and waste management by EPA.
   3. The list of species being proposed for research and extension program contents developed by NAREI shall be approved by ESG and the use of invasive species monitored by EPA.
   4. External monitoring shall be carried out as follows: Infrastructure design shall be approved by an international specialist, and the operation audited annually by an external consultant.
   5. ASDU shall be responsible for ensuring that the program ESMP, as well as specific ESMPs for each new construction are followed.
   6. The Borrower will conduct internal audits and send six monthly reports to the IDB. A supervision mission will be conducted annually during construction and operation phases. In addition Bank supervision shall be carried out by the project team.
2. Environmental and Social Safeguard Performance Indicators
   1. The Results Matrix developed for the project contains one general indicator related to sustainable agriculture. More specific indicators are listed in the ESMP.
3. Environmental and Social Management Plan Budget
   1. Many of the requirements specified above fall within already established budget lines within the project management report. As indicated in the table below, these requirements refer to the following lines:

|  |  |
| --- | --- |
| **Budget line** | **ESMP requirement within this budget line** |
| *Component 2* |  |
| 2.1.2 Design and supervision of new agricultural centre in Region 9 | 1. EIA produced that reflects flooding risk, the location of an independent well as a water source for the abattoir and includes an EIA for the water catchment reservoir 2. Supervision of construction works |
| 2.4.3 Workshops to train farmers in the use and benefits of technologies promoted by the agricultural centres | 1. To ensure training is provided that promotes sustainable agriculture and does not promote invasive species use (including GMOs), the need for high levels of pesticide and herbicide or high water demanding crops. |
| 2.5 NAREI and GLDA staff trained | 1. To ensure there is capacity in research and extension services related to sustainable agriculture. 2. To ensure that there is understanding of how to ensure inclusion of women and Amerindian groups in the training and extension. |
| 2.6 Support to EPA for supervision | To ensure EPA can carry out regular inspection of the new facilities in construction and operation, and including the agricultural research and extension programme. |
| *Component 3* |  |
| 3.1.1 Strengthening of producer association in Region 9 | To ensure there is capacity to operate the abattoir to meet international standards |
| 3.1.2 Design and supervision of infrastructure in Region 9 | To ensure design and construction meet international standards for animal welfare, water use and waste management |
| 3.2.1 Strengthening of the producer association in Region 5 | To ensure there is capacity to operate the abattoir to meet international standards |
| 3.2.2 Design and supervision of infrastructure in Region 5 | To ensure design and construction meet international standards for animal welfare, water use and waste management |
| 3.3 Training in Sanitary and Phytosanitary and food safety standards for workers and inspectors | To ensure there is capacity to operate and supervise the abattoirs to meet health and safety standards |
| 3.4 Update of legal framework and regulations | To ensure there is a legal framework for abattoir management and animal welfare |

The only budget line specifically for Environmental and Social Management Plan supervision is 2.6: US$ 130,000 to support EPA in their function to supervise adequacy of designs, the EIA, construction , waste management and the contents of the training courses.

1. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS

The Borrower undertakes, by itself, or through the Executing Agency to:

1. Throughout the execution of the Program to:
2. comply and enforce any contractor to comply, to the Bank's satisfaction, with the conditions in the Environmental and Social Management Plan (ESMP), and require prior written approval of the Bank before approving or implementing any changes in this plan;
3. obtain and present to the Bank any environmental, social, health and safety, and labor related permits, authorizations, or licenses applicable to the Program; and
4. comply with all Bank relevant policies and procedures, including the Environment and Safeguards Compliance Policy (OP-703), the Disaster Risk Management Policy (OP-704) and the Disclosure of Information Policy (OP-102), and the Gender and Equity in Development Policy (OP-270).
5. Prior to bidding of each of the works of the Program, to present to the Bank, the corresponding environmental licenses according to national law and the Environmental Impact Assessment (EIA) for each of the works under the Program, including the water catchment.
6. **Prior to the bidding of each of the works related to the abattoirs under Component 3**, to present for the Bank’s approval the design plans for the abattoirs according to international standards, detailing, inter alia, the source of water and waste management procedures.
7. Prior to the execution of any agricultural research and training activities under Component 2, to present for the Bank’s approval the list of species to be promoted in the agricultural research centers and included in the technological innovation packages.

.