RWANDA

LIVESTOCK INFRASTRUCTURE SUPPORT PROGRAMME.

ADVANCE PAYMENT FROM THE PROJECT PREPARATION FINANCING FACILITY (PPF)

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DEPARTMENT OF AGRICULTURE
AND AGRO-INDUSTRY
OSAN
SEPTEMBER 2010
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1. INTRODUCTION

1.1 Background

1.1.1 Rwanda’s Vision 2020 document envisages the country as a middle-income economy with a healthier and better educated population, with life expectancy increasing to 55 years, full literacy, and a per capita income of US$ 900 by 2020. Consistent with this Vision, Rwanda’s current medium term Economic Development and Poverty Reduction Strategy (EDPRS), covering the period 2008 to 2012, emphasizes on a dynamic and innovative private sector, rapid knowledge and skill acquisition, good governance, and a responsive and effective public sector as key instruments for economic transformation. The strategy builds on strong achievements in human capital development and promotes three flagship programmes - Sustainable Growth for Jobs and Exports; Vision 2020 Umurenge (a decentralized social protection scheme); and Governance. These flagship programmes serve as a device to prioritise actions by the GoR, mobilise resources for development and improve policy implementation through more co-ordinated interventions across sectors.

1.1.2 Agriculture is identified by the Government as one of the key sectors in both the EDPRS and Vision 2020 documents. Agriculture remains the economic backbone and a major component of GDP employing about 80% of the working population, contributing over 30% of the national GDP and generates about 80% of total export revenues. It also provides 90 percent of the country’s food needs. The Government has formulated a coherent strategy for the sector, the Strategic Plan for Agricultural Transformation in Rwanda – Phase II (PSTA II) issued in February 2009 which covers the four year period 2009-2012 in response to the need for an updated strategy for agriculture. Its overall objective is to rapidly increase agricultural output and incomes under sustainable production systems and for all groups of farmers, and ensure food security for all the population.

1.1.3 The PSTA II which is fully aligned with the EDPRS and Vision 2020 has four interrelated strategic programmes as follows: (i) Physical resources and food production: Intensification of sustainable production systems which entails relieving the physical constraints to the sector’s development, in the areas of erosion control, water capture and management structures, input use, food and nutrition security. It also incorporates the training activities that need to accompany the provision of physical infrastructure and inputs; (ii) Producer organisation and knowledge systems: The professionalization of producers and other economic agents aimed directly at making the sector more knowledge-intensive through professionalization and capacity building for producer organizations and through improvements in the systems for technology generation and dissemination; (iii) Creating an environment conducive to entrepreneurship: A framework for commodity chains, horticulture and agribusiness development. This programme is designed to enhance producer knowledge in the areas of quality control, post-harvest management and marketing, including the
production of fortified food products, and to provide associated technical expertise and infrastructure, including in agro-processing. It also aims to promote agribusiness development; and (iv) Institutional development: Strengthening the public sector and regulatory framework for agriculture directed at strengthening the public sector’s capacity to support sectoral development and at improving the policies that guide actions by producers and entrepreneurs.

1.1.4 One of the main programmes in the EDPRS is improvement of dairy farmers’ technical and organizational capacity, improving the dairy chain and strengthening the institutional framework at central and local level. The dairy industry in Rwanda is young and growing fast. It currently produces about 160,000,000 litres of fresh milk. About 62,000,000 litres are consumed on farm, and about 35% of the raw milk is wasted from spoiling before reaching the market or being processed. Most of the milk (48%) is produced in traditional or extensive grazing system in the Eastern Province. Milk production is severely affected by water availability as average milk production falls by as much as 60% during the dry season. Poor infrastructure especially road networks between production areas and the market is another major constraint to milk producers. Dairy farmers depend on bicycle transporters who buy milk at very low prices and most of the times, on credit. This could be true that milk really got spoilt due to prolonged exposure in the sun and has undergone a lot of shaking due to corrugated pathways, but the farmer is the ultimate loser.

1.1.5 In December 2009 the Government of Rwanda (GOR) submitted a request to the Bank for the financing through a Sector Budget Support (SBS) of the Livestock Infrastructure Support Programme (LISP). The programme would focus more on rural infrastructure, especially water for livestock farmers and feeder roads to improve access for livestock farms. It would also increase the milk handling capacity through the construction of more milk collection centres (MCCs). The Bank fielded a mission in June/July 2010 to prepare the programme. The GOR informed the mission that it wanted to ensure a good quality project at entry and all detailed designs and tender documents for the required civil works for the livestock water supply are prepared well in advance to ensure early start of the Programme. The GOR submitted a request for a Project Preparation Facility (PPF) advance by letter of 13 July 2010 for this purpose. The appraisal of the PPF was done during the preparation mission. The LISP will be appraised at the end of 2010 for Board presentation during the first quarter of 2011.

1.1.6 The LISP falls under strategic programmes 1 and 3 of the PSTA II. It is in line with the priorities of the Bank’s Country Strategy (CSP) for Rwanda and also the strategic direction of the Bank’s Agriculture Sector Strategy (AgSS) in terms of rural infrastructure, natural resources management and capacity building.

1.2 Programme objective and description

1.2.1 The goal of the LISP is the creation of an enabling environment that will stimulate the development of a modern livestock industry in Rwanda through value addition and access to markets. The specific objective of the Programme is to build the necessary infrastructure and services that will contribute to the development of a sustainable and profitable livestock production and marketing and overall improvement of the livestock industry in Rwanda.

1.2.2 The programme will have 2 major components:
A. Livestock Infrastructure Support Component

This component has two sub-components

Sub-component 1: Community Livestock Infrastructure Support: Under this sub-component 70 Milk Collection Centres (MCC) will be constructed and supplied with cooling tanks, cheese, cream and pasteurization equipment depending on the specific requirement of the MCC. Livestock Watering System (LWS) will be developed in 72 sites based on a study to be carried out to prepare the designs and which is the subject of the present PPF. Twenty four (24) Livestock Markets will also be constructed and provided with adequate facilities for animal handling loading and unloading as well as drinking water in the market. Two modern and hygienic slaughter facilities for large and small livestock will be constructed with lairages, amenities, hides/skins treatment and storage sheds, chilling room, cutting/deboning/processing room, access road, security fencing, parking area and landscaping. Separate sewage reticulation will be provided for sanitary sewerage and laundry waste water either connected directly to the city’s sewer system or to a septic tank.

Sub-component 2: Public Livestock Infrastructure Support: Under this component one new veterinary clinic (VC) will be constructed and equipped while one, which is already constructed, will be equipped. The existing Artificial Insemination Centres (AIC) will be rehabilitated and equipped to support artificial insemination services delivery in the country. Rehabilitation of 150 km (total length) of rural feeder roads including construction of crossing points like culverts and drifts, with proper drainage system will be carried out in order to provide farmers with access to markets. Five Veterinary Quarantine Stations will either be constructed or rehabilitated to support disease control. Each station will have livestock handling and watering facilities, field laboratory, office block with furniture and equipment, communication system, fencing, incinerator and stand-by generator.

B. Food Security Enhancement and Capacity Building Component

This component has also 2 sub-components.

Sub-component 1: Support to One Cow Per Poor Family: Under this subcomponent one in-calf crossbreed heifer will be provided to 15,000 poor families to support food security and income generation. At least 30% will go to women headed households.

Sub-component 2: Support to Productivity Enhancing Technologies: This sub-component will support the genetic improvement through the provision of motor cycles to about 416 artificial Insemination technicians to facilitate insemination service which envisages inseminating about 300,000 cows during the programme period. Support will also be provided for fodder multiplication and distribution as well as campaigns to increase awareness of the value of improved feed in livestock production.

Sub Component 3: Capacity Building: Farmers and other stakeholders in the livestock industry will receive training in various aspects of animal husbandry, animal health, agribusiness, entrepreneurial skills, milk handling and processing techniques, feed formulation, group formation and management techniques. Some study tours will be carried
out to expose them to best practices. About 500 veterinary staff will also undergo short courses, seminars, conferences and workshop to improve their capacity.

### 1.2.3 Programme Coordination and Management

In line with the implementation modalities of the PSTA II, the programme will be implemented by the MINAGRI through its established Departments and Agencies. The programme activities are district-based and the district staff would be fully involved in all the aspects of implementation of programme activities.

The operation will be implemented as a Sector Budget Support (SBS). Under the SBS the ADF grant resources will be disbursed in tranches based on an Annual Work Plan and Budget (AWPB) submitted by the MINAGRI to the Bank prior to the beginning of the fiscal year. The disbursement of subsequent years’ tranches will be based on the AWPB as well as the outcome from the annual assessment of programme’s performance.

### 1.3 Justification of the Utilisation of the PPF Advance

Livestock production relies on water availability for both forage and milk production. Though Rwanda is blessed with many water sources like rivers, lakes and springs, readily available water for livestock production is greatly affected by the seasons. During the rainy season there is availability of lush green grass and drinking water for the livestock. On the other hand, the dry season brings reduced forage and reduced water supply to the livestock. Animals therefore, have to trek several kilometers in search of water leading to loss of production and productivity. Average milk production falls by as much as 60% during the dry season. To ameliorate this it would be necessary to develop the available water sources, including harvesting rainwater and run-offs, so that they can be conserved and used during the dry periods in order to maintain optimum production and productivity and maximize gains for the smallholder livestock producers.

The LISP will, therefore facilitate access to water by livestock farms in the milk basins of Gishwati in the west (Districts of Nyabihu, Rubavu, Ngorero and Rutsiro) and Umutara in the east (Districts of Nyagataré, Gatsibo and Kayonza) taking into consideration the Government strategy based on ‘zero livestock movement’ that requires delivering water to each farm. Information on water resources in the two milk basins is limited. Preliminary designs of the water supply systems to be constructed by the programme and their location are also not available. Undertaking the study of water resources and design of the works after programme start up is not a viable option as it would lead to delays in programme implementation. With the PPF financing the design and tender documents for the required civil works for the livestock, water supply can be undertaken well in advance of programme start up.

A comprehensive assessment of the portfolio undertaken as part of the preparation of the 2008-2011 CSP identified the lack of project readiness for implementation at entry as a critical problem in Rwanda’s portfolio and this problem is expensive for Rwanda. First, it leads to delays between Board approval and effectiveness. Second, implementation delays are common leading to extension beyond the originally planned closing dates. Third, capital flows are delayed (less disbursements than originally envisaged). Lack of project readiness at entry is expensive for Rwanda as it ultimately means delay in the delivery of development benefits to the beneficiaries. It is also costly for the Bank Group in two important ways: (i) supervision resources were expended for a much longer period than originally envisaged—
over five years in most cases; and (ii) missed opportunities to develop a robust pipeline of new projects and to carry out rigorous analytical work and other knowledge services to inform the lending program. In order to remedy the situation the Rwandan Government and the Bank agreed as part of a four-point Portfolio Improvement Plan for this CSP period, to adopt a project implementation “readiness filter” for enhanced quality at entry.

2. DESCRIPTION OF ACTIVITIES FINANCED BY THE PPF

2.1 The overall objectives of the study are (i) to assess water requirements of the livestock farms, carry out relevant technical investigations and studies (comprising of but not limited to hydrological, hydro-geological and hydraulic studies, topographical surveys, geotechnical investigations, socio-economic assessment), and prepare detailed engineering designs for the 72 LWS and tender documents to facilitate the construction of civil and hydraulic structures and (ii) to propose a management system for operation and maintenance for the 72 LWS that would reduce the burden on the government and lead to ownership of the facilities by farmers for sustainability. Detailed Terms of references (TOR) of the study has been prepared to be used by the selected consultant. A summary is provided in annex II.

2.2 The study would produce (i) reports on water requirements for the livestock of the Gishwati and Umutara milk basins, water resources available and proposal for developing the water supply for livestock farmers; (ii) preliminary and detailed engineering design reports of the 72 LWS and tender documents for the civil works; (iii) a proposal for a management system for the 72 LWS that would make the livestock farmers take ownership of their operation and maintenance for sustainability, and (iv) an environmental and social impact assessment report of the 72 LWS.

3. ESTIMATED COST FOR THE PREPARATION ACTIVITIES

3.1 Estimated Costs of the Studies

The estimated costs, excluding taxes and duties, allocated in foreign and local currencies, are given in the table 3.1 below.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Foreign Currency 000 UA</th>
<th>Local Currency 000 UA</th>
<th>Total Costs 000 UA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Personnel</td>
<td>207000</td>
<td>96420</td>
<td>303420</td>
</tr>
<tr>
<td>Topographical Surveys</td>
<td>140790</td>
<td>23170</td>
<td>163960</td>
</tr>
<tr>
<td>Equipment</td>
<td>7050</td>
<td>7050</td>
<td>7050</td>
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<tr>
<td>Travel costs</td>
<td>4735</td>
<td>4735</td>
<td>4735</td>
</tr>
<tr>
<td>Audit</td>
<td>10000</td>
<td>10000</td>
<td>10000</td>
</tr>
<tr>
<td><strong>Total Base Costs</strong></td>
<td><strong>352525</strong></td>
<td><strong>136640</strong></td>
<td><strong>489165</strong></td>
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<tr>
<td>Contingencies</td>
<td>7475</td>
<td>3360</td>
<td>10835</td>
</tr>
<tr>
<td><strong>Total Costs of the Study</strong></td>
<td><strong>360000</strong></td>
<td><strong>140000</strong></td>
<td><strong>500000</strong></td>
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</tbody>
</table>

In addition, Government will finance operating expenses.
3.2 **Financial Plan**

The PPF Financial Plan is given in Table 3.2 below.

<table>
<thead>
<tr>
<th>Financial sources</th>
<th>Foreign Currency</th>
<th>Local Currency</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF</td>
<td>360,000</td>
<td>140,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>360,000</td>
<td>140,000</td>
<td>500,000</td>
</tr>
</tbody>
</table>

4. **MODALITIES FOR PROCUREMENT OF SERVICES**

Following Board approval, the water supply study will be launched within 8 weeks. Experiences in implementing PPF have shown that the recruitment of consultants using the shortlist mode tends to take long and therefore, not appropriate for a PPF which has to deliver services before project take-off. On this basis, both the Bank and the Government have agreed on an innovative approach similar to that used for the African Food Crisis Response. This is the use of sole sourcing of a firm which is acceptable to the Bank on the basis of the following criteria:

- was initially recruited by the Government through a competitive process for Similar services financed by the Bank or another development partner, such as the WB, IFAD, etc.,
- proven evidence of having successfully completed a similar assignment; and
- willingness and capacity to undertake the services at short notice.

The terms will be based on the most recent assignment adjusted for inflation.

5. **IMPLEMENTATION PLAN AND IMPLEMENTATION BODY**

The activities connected to the studies will be carried out within a 6 month-duration starting from the date the agreement becomes effective. The activities will be executed according to the following implementation plan:

<table>
<thead>
<tr>
<th>Activity / Actions</th>
<th>Responsible</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval by the Board</td>
<td>ADF</td>
<td>18/10/2010</td>
</tr>
<tr>
<td>Selection of consultant firm</td>
<td>Government</td>
<td>08/11/2010</td>
</tr>
<tr>
<td>Approval ADB and Signature of contracts</td>
<td>Government/ADF</td>
<td>15/11/2010</td>
</tr>
<tr>
<td>Studies (final report)</td>
<td>Consultants</td>
<td>29/04/2011</td>
</tr>
</tbody>
</table>

6. **FINANCIAL ARRANGEMENT**

6.1 **Refinancing and Advances Reimbursement**
It is planned that the Livestock Infrastructure Support Programme (LISP) be financed by the ADF. The refinancing and the reimbursement of the advance will be done according to the financial arrangements applicable to the PPF advances.

6.2 Suspension for Disbursement of PPF advances

If it turns out that the suspension of the PPF advance is necessary, this suspension will conform to the directives that govern the utilization of PPF resources.

6.3 Special Account

It is not envisaged that a special account will be opened for the PPF as the government will use its own resources to finance the operating cost. The resources for advances will serve solely to finance the consultant services for the studies and the Audit. The direct payment method will be used for the settlement of these services.

6.4 Agreement Letter and Annexes

The draft letter of Agreement and its annexes (the subject, the conditions and modalities of the advance, the special deposit account, and the financial arrangements applicable to the PPF advances), are shown in Annex 1.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The PPF advance solicited by the Government of Rwanda will enable the preparation of preliminary design studies of the Livestock Infrastructure Support Programme (LISP). The programme for which the studies are envisaged is inscribed in the CSP as a part of the Bank cooperation programme for the country under the framework of ADF XII.

7.2 Recommendations

From the foregoing, it is recommended to grant to the Government of Rwanda an advance not exceeding UA 500,000 for the financing of the study to prepare the preliminary engineering designs for the livestock water supply for the Gishwati and Umutara milk basins under the Livestock Infrastructure Support Programme (LISP).
His Excellency,
Mr. John RWAMGOMBWA
Minister of Finance and Economic Planning
Kigali - Rwanda

Subject: Rwanda – Livestock Infrastructure Support Project
– Letter for Project Preparation Grant Advance

Honourable Minister,

With reference to your letter dated 9 December 2009 and, in particular, your request for the financing of studies concerning the preparation of the above-mentioned project, we are pleased to inform you that the African Development Fund has favourably considered your request and accepted to provide the Republic of Rwanda (hereinafter referred to as “the beneficiary”) with a grant of UA 500,000 (Five hundred thousand Units of Account) (hereinafter referred to as the (advance”) to finance some expenditures relating to studies on the preparation of the Livestock Infrastructure Support Project.

The said advance is granted for the purposes and under the terms and conditions set in Appendices I and II attached to this agreement letter.

In confirming its consent below, the beneficiary states that it is authorized to contract and withdraw the advance for the purposes, terms and conditions stipulated in the Annexes of this agreement letter.

The financing of preparation activities does not constitute or imply an undertaking by the Fund to contribute to the financing of the project for which the envisaged study will be conducted.

We should be grateful if you could confirm, on behalf of the beneficiary, your agreement with the provisions referred to above, by signing, dating and returning the attached copy of the agreement letter to us. The agreement will take effect on the date of its countersigning by the Fund.

Please accept, Honourable Minister, the assurance of our highest consideration.

AFRICAN DEVELOPMENT FUND
By

Dr. Kamal EL KHESHEN
Vice-President, Sector Operations II

Date: .............................................

REPUBLIC OF RWANDA
By

John RWAMGOMBWA
Minister of Finance and Economic Planning

Date: .............................................
Appendix I

Purpose, terms and conditions of the advance

1. The advance is granted for the following activities, to undertake a study to develop water supply systems for livestock farmers in the Gishwati and Umutara milk basins taking into consideration the Government’s strategy based on ‘zero livestock movement’ that requires the delivery of water to each farm. Specifically the study will:

   (i) assess the water requirements of the livestock farms, carry out relevant technical investigations and studies and preparation of detailed engineering designs and tender documents to facilitate the construction of civil and hydraulic structures and

   (ii) propose a management system for operation and maintenance that would reduce the burden on the government and make the scheme farmers take ownership of the operation and maintenance for sustainability.

2. The expenditures to be financed are summarized in table 3.1 of the main report.

3. The beneficiary:
   i) shall diligently and efficiently carry out the preparation activities referred to above:
   ii) shall immediately provide the funds, means, services and any other resources required for the preparation activities.
   iii) shall communicate to the Fund all information concerning these activities and the use of advance resources which the Bank may reasonably request; and iv) shall periodically exchange views with representatives of the Fund on the status and results of these activities.

4. The opening of a special account is not envisaged for this advance. The consultancy services shall be paid through the direct payment method.

5. The beneficiary shall use consultants acceptable to the Fund, on the basis of terms and conditions that are satisfactory to the latter. The consultants shall be selected using sole sourcing procurement procedure as specified under Modalities for Procurement of services. The consultants may not be replaced and the terms and conditions of their use may not be changed without the prior approval of the Fund.

6. The advance shall be withdrawn and used in accordance with the financial provisions applicable to advances for project preparation (the “financial provisions”) mentioned in appendix II.
7. The date ____________ is specified for the purpose of paragraph 6 of the financial provisions. Beyond this date, no withdrawal from the advance shall be allowed and any unwithdrawn amount shall be cancelled, unless the Bank sets another date for the purpose of paragraph 6.

8. Withdrawal requests shall be signed by the Minister of the Economy, Finance and the Budget or any other person designated in writing by this authorized representative of the Government. The authenticated signature specimens of the persons thus designated shall be attached to the initial withdrawal request.
Appendix II

Financial provisions applicable to advances for project preparation

1. In these provisions, the term “Fund” shall refer to the African Development Fund (the “Fund”).

2. The Fund shall disburse to the beneficiary (Republic of Rwanda) the resources of an advance for project preparation to cover the expenditures specified in the agreement letter concerning the advance. The beneficiary shall present a written withdrawal request in the form stipulated by the Fund. The request shall be signed by an authorized representative of the beneficiary, and shall include supporting documents for the expenditures made or to be made, with the Fund's approval.

3. The advance shall be disbursed in a currency agreed between the Fund and the Borrower, in accordance with the Fund's rules of disbursement.

4. Withdrawals shall be made only to settle expenditures made for services or goods from countries eligible by virtue of the Bank’s rules of procedure for the procurement of goods, works and services.

5. The Fund may, at any time, through a notification addressed to the beneficiary, suspend withdrawals from the advance should any of the following cases of suspension occur: (a) the amounts withdrawn were not used for the purposes agreed between the beneficiary and the Fund; (b) the preparation activities do not comply with the standards or methods agreed between the beneficiary and the Fund; or (c) the right of the beneficiary, or any other entity to which the Fund has granted a loan with the beneficiary’s guarantee, to withdraw funds by virtue of a ADF loan or grant agreement concluded with the Fund has been suspended.

6. At any time following suspension of withdrawals from the advance in accordance with these provisions, the Fund may, through a notification addressed to the beneficiary, cancel the unwithdrawn amount of the advance.
REPUBLIC OF RWANDA
LIVESTOCK INFRASTRUCTURE SUPPORT PROGRAMME (LISP)
PROJECT PREPARATION FACILIT Y (PPF) ADVANCE

Summary of the Terms of Reference

Study for the Design of Livestock Watering Systems for the Livestock Farms of the Gishwati and Umutara Milk Basins

1. Introduction

1.1 Agriculture is identified by the Government as one of the key sectors in both the Economic Development and Poverty Reduction Strategy (EDPRS) and Vision 2020 documents. Agriculture remains the economic backbone and a major component of GDP employing about 80% of the working population, contributing over 30% of the national GDP and generating about 80% of total export revenues. It also provides 90 percent of the country’s food needs. One of the main programmes in the EDPRS is improvement of dairy farmers’ technical and organizational capacity, improving the dairy chain and strengthening the institutional framework at central and local level. The dairy industry in Rwanda is young and growing fast. It currently produces about 160,000,000 litres of fresh milk. About 62,000,000 litres are consumed on farm, and about 35% of the raw milk is wasted from spoiling before reaching the market or being processed. Most of the milk (48%) is produced in traditional or extensive grazing system in the Eastern Province. Milk production in Rwanda is severely affected by water availability as average milk production falls by as much as 60% during the dry season.

1.2 Livestock production relies on water availability for both forage and milk production. Though Rwanda is blessed with many water sources like rivers, lakes and springs, readily available water for livestock production is greatly affected by the seasons. During the rainy season there is availability of lush green grass and drinking water for the livestock. On the other hand, the dry season brings reduced forage and reduced water supply to the livestock. Animals therefore, have to trek several kilometers in search of water leading to loss of production and productivity. Average milk production falls by as much as 60% during the dry season. To ameliorate this it would be necessary to develop the available water sources, including rainwater and run-offs, so that they can be conserved and used during the dry periods in order to maintain optimum production and productivity and maximize gains for the smallholder livestock producers. The LISP will, therefore facilitate access to water by livestock farms in the milk basins of Gishwati in the west (Districts of Nyabihu, Rubavu, Ngorero and Rutsiro) and Umutara in the east (Districts of Nyagatare, Gatsibo and Kayonza) taking into consideration the Government strategy based on ‘zero livestock movement’ that requires delivery the water to each farm. Generally, information on water resources in the two milk basins is limited, but some sites
have been identified by the MINAGRI in the Umutara milk basin. Further studies and designs of the water supply systems to be constructed by the programme and their location need to be carried out. The GOR submitted has requested the African Development Bank for a Project Preparation Facility (PPF) advance to undertake the preparation of the designs and tender documents for the required civil works for the livestock water supply.

2. Objective of the study

The objective of the proposed study is to prepare the designs and tender documents for the water supply to livestock farms in the project area including tender documents.

3. Description of the Study

3.1 The study will be undertaken in three phases over a period of 6 months. The reconnaissance phase shall be of two weeks duration and shall entail a detailed review, analysis and assessment of relevant and available information concerning the project area. This phase shall focus on activities that would enable the consultant to understand the nature and extent of the study area and to plan and design the best methodology and strategy for the preliminary design phase of the study.

3.2 For the preliminary design phase the Consultant will carry out detailed and relevant investigations and analysis to establish the appropriate structures to be put in place for the water supply and to determine their technical, social and environmental feasibility. The technical investigations shall include but not limited to geological studies, topographical surveys, hydrological and hydro-geological studies within the project area. He will on the basis of the results of the studies prepare the relevant investigations and analytical reports 3 months after the start of the study.

3.3 Water Resources: The Consultant shall make an assessment of the water resources available. Thorough surveys will be required for both surface and ground water to assess the amount of water available from all sources (rivers and springs through gravity; rain water harvesting; pumping from surface water source or underground water source) and their dependability for the livestock farms and water demand information and consumption standards for use in subsequent modeling and analysis. Water resources surveys will include desk reviews of existing information and data, remote sensing, field review of existing gauging stations and establishment of new ones, subsurface exploration including test boreholes in areas where sufficient information does not exist. Separate consideration will need to be given to surface water, ground water and water resources development.

3.4 Groundwater analysis will also require study of: (i) the extent of the available groundwater resource within the river basin, including well yields for a range of well-field designs, the depth of wells, water table and drawdown; the effects of abstraction on other
elements of the hydrological cycle and adjacent aquifers; (ii) groundwater chemical quality; and (iii) long-terms forecast of probable changes in quantity and quality.

3.5 The Consultant will assess the current management of the water resources by the farmers within the two milk basins, the critical period of water need for watering of livestock, constraints. He will propose solutions for sustainable water use which would be acceptable to the livestock farmers based on water needs of both the livestock and human population.

3.6 **Cost Estimates and Schedules:** Cost estimates for each water supply system shall be prepared in sufficient detail to reflect the level of the feasibility engineering design. In addition, the consultant shall present the operation and maintenance costs of the individual system in as many aspects of the work as possible. The consultant shall take particular attention to ensure that the recurrent costs can be borne by the beneficiaries when the project ends. The Consultant’s proposal should also take into consideration the contribution (even in kind) of the beneficiaries to the investment and the recurrent cost of the water supply system.

3.7 **Organisation and Management:** The organisation and management structure of the water supply system shall be designed to be in line with the decentralised one adopted by Government. The design will take into account the need for the active involvement of non-governmental organisations (NGOs), community-based organisations (CBOs) and the private sector in the implementation of the potential projects. A system for monitoring and evaluation of implementation of project activities shall be proposed.

3.8 **Environmental and social impact assessment** would identify and assess the potential importance of beneficial and adverse environmental and social effects on the project area of the establishment of the water supply systems, direct and indirect, short and long-term, temporary and permanent impacts, on the basis of a rigorous method. It would also define appropriate mitigation/enhancement measures to prevent, minimise, mitigate, or compensate for adverse impacts or to enhance the programme environmental and social benefits, including responsibilities and associated costs. An environmental and social monitoring program, would be developed for each system which would including indicators, institutional responsibilities and associated costs. An Environmental and Social Impact Assessment (ESIA) report would be prepared for each for the milk basin.

3.9 During the **detailed design and tender preparation phase** detailed structural and hydraulic design of the structures, including design or adoption of appropriate abstraction systems and watering amenities will be carried out based on further technical, social and environmental investigations and analysis, and water demand surveys. The Consultant shall prepare bills of quantities, specifications and drawings; engineers estimate for the construction works and the bidding documents.
3.10 The duration of the study shall be 6 calendar months and the consultant shall provide 40.5 person-months of expert time:

(i) 1 water engineer for a total of 5 person months
(ii) 2 water engineers for a total of 8 person months
(iii) 1 hydrologist/hydrogeologist for a total of 2 person months
(iv) 1 geo-physicist for a total of 3 person months
(v) 2 surveyors for a total of 12 person months
(vi) 2 socio-economist for a total of 4 person months
(vii) 1 environmentalist for a total of 3.5 person months
(viii) 1 electro-mechanical engineer for a total of 3 person months