AFRICAN DEVELOPMENT BANK GROUP

CAMEROON : LIVESTOCK AND FISHERIES VALUE CHAIN DEVELOPMENT PROJECT (PD-CVEP); CONSTRUCTION OF A MODERN CATTLE SLAUGHTERHOUSE IN BAMENDA-ALABUKOM

Summary of the Environmental and Social Impact Assessment (ESIA)

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Introduction

This document is a summary of the Environmental and Social Impact Assessment (ESIA) of the Project to Construct a Modern Cattle Slaughterhouse in Bamenda-Alabukom. The detailed design of the modern slaughterhouse construction project will be provided by the developers of the said project, once selected through national competitive biddings. That is why this study is a framework ESIA covering the entire site and associated infrastructure. This framework ESIA was submitted to the Ministry of the Environment, Nature Protection and Sustainable Development (MINEPDED) for approval.

In accordance with the African Development Bank (AfDB) Group’s Safeguard System and national requirements, this project is classified in the category of production sectors dedicated to livestock farming. The summary was prepared in accordance with AfDB environmental and social assessment directives and procedures for projects of the said category.

The project rationale and description are first presented, followed by the country’s legal and institutional framework. A brief description of the project area’s main environmental conditions is presented in its physical, biological and human components. The technological options considered are compared in terms of technical, economic, environmental and social feasibility. The most significant positive and negative impacts on the bio-physical and human (socio-economic) environments are then presented, followed by the enhancement and mitigation measures proposed to increase the benefits and/or prevent, minimise, mitigate or offset the said negative impacts, their implementation schedule, the costs as well as the monitoring programme. The summary of climate change risks as well as adaptation and mitigation measures are proposed. Public consultations are outlined as well as project-related additional initiatives.

1. PROJECT RATIONALE AND DESCRIPTION

1.1. Project Rationale

The Government of the Republic of Cameroon, in its policy to improve the living conditions of the population and develop growth sectors, plans to implement the Livestock and Fisheries Value Chain Development Project (PD-CVEP). This project is in line with the guidelines of Cameroon’s Growth and Employment Strategy Paper (GESP 2010-2020), which lays emphasis on infrastructure development, productive capacity modernisation and trade diversification. It is also consistent with the Rural Sector Development Strategy (SDSR), particularly Pillars 2 and 3, which aim, respectively, to improve the productivity and competitiveness of the sub-sectors and to modernise rural and agricultural production infrastructure. In addition, the PD-CVEP is in line with the 2014-2020 National Agricultural Investment Plan (PNIA) approved in April 2014, particularly with regard to the development of production sub-sectors, the improvement of food and nutrition security, the modernisation of rural production infrastructure, capacity building for rural development actors and the development of natural resources.

The livestock sub-sector suffers from a lack of infrastructure for slaughtering, conservation (cold chain) and marketing of livestock and fishery products, the proliferation of illegal slaughtering (60% for cattle, 90% for pigs and 80% for sheep) and the precarious product packaging, transport, distribution and storage conditions. This highlights the importance of Component 1 of the PD-CVEP, which aims to develop infrastructure for upgrading the beef, pork and fish sub-sectors, and which involves the construction of 4 slaughterhouses and their
related structures (services, markets, connection to the power and drinking water network). The beneficiary cities of the four slaughterhouses are Yaounde, Douala, Maroua and Bamenda. The Project to Construct a Modern Cattle Slaughterhouse in Bamenda-Alabukom, therefore, falls in Component 1, which aims at the competitive and hygienic increase in cattle products, the improvement of the incomes of the actors and the creation of new jobs along the value chain. It also aims at contributing inclusively to improving food and nutrition security and reducing poverty.

1.2. Project Description

The project involves building a modern slaughterhouse in the city of Bamenda, Cameroon. The "slaughterhouse" component will include several elements as follows:

- Cattle line;
- Refrigerator block rails and refrigeration equipment;
- Gut and tripe dressing unit;
- Rolling stock and small equipment;
- Cutting equipment;
- Cutlery;
- Special equipment and other equipment; and
- Cattle stabling park.

The slaughtering capacity will be 150 head of cattle per day. The slaughterhouse site will also include:

- A by-product recovery unit;
- A waste treatment unit;
- An administrative building and a staff residence;
- A borehole with a solar unit; and
- A sentry box and a canteen.

The project site covers a total area of 9.32 hectares. Site installation plans and other infrastructure are presented in the following figures.
Model of the project (rear view, from the stabling park)

1.3. **Project Location**

The project to construct the slaughterhouse in Bamenda-Alabukom is located in Bamenda II Sub-division in Bamenda, North-West Region. The project site is a plot of 9.32 ha in area that is in the process of registration by MINEPIA local services. The site is about 9 km from the city of Bamenda, from the MINEPIA divisional delegation. The location map is shown below:
2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1. Applicable National Regulatory Instruments

The national legal framework consists of a set of legal and regulatory instruments relating to the environment, the livestock sector, the social component, classified establishments and other areas more or less concerned by the project.

2.1.1. Instruments in the field of environment

These instruments include:

✓ **The 1996 Constitution**: It guarantees from its preamble the right of all citizens to a healthy environment: "every person shall have a right to a healthy environment. The protection of the environment shall be the duty of every citizen. The State shall ensure the protection and improvement of the environment".

✓ **Law No. 96/12 of 5 August 1996 on the Framework Law on environmental management**: It sets out principles that serve as a reference framework for more specific enabling instruments, and includes provisions that enable it to align with the requirements of several institutions and deal with any environmental issue. This framework law is the basic legal instrument for the protection of the environment in Cameroon.

✓ **Decree No. 2006/1577/PM of 11 September 2006 on the organisation and functioning of the Interministerial Committee for the Environment**: This decree lays down the composition of the Interministerial Committee for the Environment (CIE), which is the body that analyses the reports of environmental assessments conducted in Cameroon, and gives its opinion to the Minister in charge of the environment for validation or not of these reports.

✓ **Decree No. 2008/064 of 4 February 2008 to lay down the terms of management of the National Environment and Sustainable Development Fund (FNEDD)**: It defines this structure’s resources and expenditure. The decree also creates a Programmes Committee responsible for assisting the Minister in charge of the environment in selecting priority studies and projects eligible for FNEDD resources.

✓ **Decree No. 2011/2585/PM of 23 August 2011 to establish the list of harmful or hazardous substances and the regime of their release in inland waters**: It lists the harmful or hazardous substances prohibited, those subject to prior authorisation, and specifies that these lists may be supplemented by those of international conventions ratified by Cameroon or, as needed, those adopted by the Minister in charge of the environment.

✓ **Decree No. 2011/2583/PM of 23 August 2011 to regulate noise and odour nuisances**: This decree prohibits, among others, the carrying out of activities or noisy work that disturb the neighbourhood beyond emission values and periods laid down by the body responsible for standardisation and quality.
✓ Decree No. 2011/2584/PM of 23 August 2011 to lay down the terms of soil and subsoil protection: It sets out the conditions of soil and sub-soil protection and/or the fight against erosion and desertification, loss of arable land, and pollution by chemicals.

✓ Decree No. 2011/2582/PM of 23 August 2011 to lay down the terms of protection of the atmosphere: It defines the various types of atmospheric pollutants and the means of controlling air quality;

✓ Decree No. 2012/2809/PM of 26 September 2012 to set the conditions for sorting, collecting, storing, transporting, recovering, recycling, treating and ultimately disposing of waste: It defines waste management methods and highlights the development, by the municipality, of a council or inter-council plan for the management of household and similar waste. This decree advocates the environmentally sound management of waste.

✓ Decree No. 2012/2808/PM of 26 September 2012 to set the conditions for exercising the functions of inspector and controller of the environment: This instrument defines the remit and prerogatives of inspectors and controllers of the environment, and describes the conduct of environmental inspections and controls;

✓ Decree No. 2013/0171/PM of 14/02/2013 to lay down the procedures for conducting environmental and social impact assessments: This decree clarifies the procedures for conducting environmental and social impact assessments, and specifies, among others, the content of the ESIA report, the procedure for preparing and approving ESIA s, monitoring procedures and environmental monitoring;

✓ Order No. 001/MINEP of 3 April 2013 on the organisation and functioning of Divisional Committees for the Monitoring and Implementation of Environmental and Social Management Plans (ESMP). This order specifies, among others, the composition and various missions of these committees to effectively apply ESMPs resulting from ESIA s.

2.1.2. Livestock-related Instruments

In the field of livestock, the legal arsenal underpinning this project is represented mainly by:

✓ Framework Law No. 2011/012 of 6 May 2011 to protect the consumer in Cameroon. This law sets out several principles to protect the consumer, including the principle of consumer protection. This law and this principle are essential under this project, because it will make available to consumers a consumer product that is meat.

2.1.3. Land Tenure Instruments

The instruments relating to land are as follows:

✓ Law of 25 June 1902 on the emphyteutic lease;
✓ Law No. 19 of 26 November 1983 to amend the provisions of Article 5 of Ordinance No. 74-1 of 6 July 1974 to establish land tenure;

✓ Decree No. 74/412 of 24 April 1974 to demarcate national agro-pastoral development schemes and define the status of such land;

✓ Decree No. 76/165 of 27 April 1976 to lay down the conditions for obtaining a land title;

✓ Decree No. 76/166 of 27 April 1976 to lay down the management arrangements for national land; and

✓ Decree No. 84/311 of 22 May 1984 to lay down the terms and conditions for applying Law No. 80/22 of 14 July 1980 to repress breaches to land ownership.

2.1.4. Compensation-related Instruments

Section 545 of the Civil Code stipulates that "no one may be compelled to give up his/her property, except for reasons of public interest, and subject to just and prior compensation". Thus, Project Affected Persons (PAP) may be required to surrender land and crop areas for the development of the platform to house the facility.

The other instruments relating to compensation are:

✓ Law No. 85-09 of 4 July 1985 on expropriation for public interest and the terms of compensation. It lays down the provisions relating to expropriations and the terms of compensation.

✓ Decree No. 2003/418/PM of 25 February 2003 to set the rates of compensation to be awarded to the owner who was a victim of destruction, for public interest, of crops and cultivated trees. This instrument is relevant in the sense that the project area is 9.32 ha and likely to have cultivable plots within it. The valuation of these assets will be based on this decree.

✓ Order No. 0832/Y.15.1/MINUH/D000 of 20 November 1987 to lay down the bases for calculating the market value of buildings expropriated for public purpose. It is possible for the project to induce the destruction of buildings. A valuation of these buildings will be made on the basis of this instrument.

2.1.5. Labour law instruments

Works will require the use of labour. The most relevant instruments relating to labour law and applicable to this project are:

✓ Law No. 92/007 of 14 August 1992 to institute the Labour Code. The contracting company responsible for implementing the project must comply with the provisions of this instrument to set the number of working hours, the types of contracts to be offered to employees as well as social security contributions;

✓ Ordinance No. 73-17 of 22 May 1973 to organise social insurance;

2.1.6. Health-related Instruments

The population’s health is not without risk with the modern cattle slaughterhouse construction project. The instruments relating thereto and of interest to the slaughterhouse are:

- Law No. 64/LF-23 of 13 November 1964 on the protection of public health in Cameroon;
- Joint Order No. 073/MINAT/MINVIL of 25 May 2000 to specify the conditions for applying certain public health and safety rules.
- Order No. 039/MTPS/IMT of 26 November 1984 to lay down general hygiene and safety measures at workplaces. The modern slaughterhouse construction site presents high risks and will mobilise a workforce of more than 50 people; it is essential for hygiene and occupational safety committees to be set up, in accordance with the provisions of this order, to improve working conditions and ensure the safety of employees.

2.1.7. Instruments relating to material cultural resources

- Law No. 2013/003 of 18 April 2013 to govern cultural heritage in Cameroon. The construction of a modern cattle slaughterhouse could be a source of accidental archeological discoveries, and their protection must be done in accordance with the provisions of this law.

2.1.8. Instruments relating to the protection of water resources

The instrument organising this sector is Law No. 98/005 of 14 April 1998 on the water regime. This law lays down the legal framework for water as well as the provisions for its safeguarding, management and protection of public health. It also states that anyone producing or holding waste must dispose of or recycle it himself, or dispose of or recycle it in approved facilities, and is required to inform the public about the effects of the production, possession, disposal or recycling of waste on water, the environment and public health, as well as on prevention or compensation measures.

2.2. Institutional Framework

The institutional actors involved in the project are found at the level of the central administration, parastatals and private organisations as well as at the local level.

2.2.1. Institutions at the central administration level

Institutions at the level of the central administration include:

- The Ministry of Livestock, Fisheries and Animal Industries (MINEPIA)

It is responsible for the development and implementation of Government policy in the area of livestock, fisheries and development of animal and fishery industries. As part of this project, whose promoter it is, MINEPIA must support
producers, by focusing on the development of short-cycle animal sub-sectors to increase the production of modern and traditional meats. Finally, within the framework of this project, MINEPIA must ensure more effective organisation and substantial investments to modernise productive capacities, in order to ensure the quantity and quality of products from the Bamenda-Alabukom slaughterhouse.

✓ The Ministry of the Environment, Nature Protection and Sustainable Development (MINEPDED)

MINEPDED is responsible for the development and implementation of Government policy on the environment and nature protection, with a view to sustainable development. At the central level, it has services that deal with issues relating to environmental impact assessments. These, specifically, are the Sub-Departments of Environmental Assessments and of Environmental Management Plans, which is also represented at the decentralised level.

In addition, it is the supervisory authority of the Interministerial Committee for the Environment (CIE), which gives opinions on environmental and social impact assessment reports.

It is MINEPDED that will validate the current ESIA after CIE’s opinion. It will then intervene in the monitoring and implementation of the project’s Environmental and Social Management Plan contained in this report.

✓ The Ministry of Water Resources and Energy (MINEE). It is responsible for the development and implementation of Government policy on the production, transportation and distribution of water and energy.

✓ The Ministry of Territorial Administration and Decentralisation (MINATD)

MINATD is responsible for the development and implementation of Government policy in territorial administration, civil protection, decentralisation and monitoring of electoral issues. It will take part in the payment of compensation to project affected persons. Similarly, the public consultation meetings organised as part of this project, will be convened and supervised by officials of the decentralised services of MINATD.

✓ The Ministry of State Property, Surveys and Land Tenure (MINDCAF);

It is responsible for the preparation, implementation and evaluation of the country’s property, land and cadastral policy. Since the project will result in the expropriation of land on which local people carry out activities, MINDCAF will take part in the census operations of the areas concerned, as well as in compensation. In addition, the secretariat of the property valuation and appraisal commission will be provided by the Divisional Service Head for State Property.

✓ The Ministry of Agriculture and Rural Development (MINADER)

This ministry is responsible for the development and implementation of Government policy in the areas of agriculture and rural development. MINADER will take part in the property valuation and appraisal commission for the valuation of crops and trees with economic value.
✓ The Ministry of Housing and Urban Development (MINHDU)

It is responsible for the implementation of the national urban development and housing policy. MINHDU will provide expertise during the construction of the structure to house the project.

✓ The Ministry of Labour and Social Security (MINTSS)

The MINTSS is responsible for the control of the application of the Labour Code and international conventions ratified by Cameroon, and the development and implementation of the welfare and social security policy. It will intervene as arbitrator in the resolution of conflicts and disputes that may occur between the employer and employees during the construction and operation phases of the facility.

✓ The Ministry of Public Health (MINSANTE)

It is responsible for the development and implementation of the Government’s public health policy. It is, among others, responsible for the development of actions to prevent and fight against epidemics and pandemics, and preventive medicine. MINSANTE will focus on monitoring the implementation of the measures taken to protect the health of workers and local residents of the project site.

✓ The Ministry of Industry, Mines and Technological Development (MINIMIDT)

MINIMIDT is responsible for the development, implementation and assessment of industrial policy and technological development strategies in various sectors of the national economy, including that of livestock and fisheries.

Since slaughterhouses are classified, hazardous and unhealthy establishments, MINIMIDT must ensure that their implementation is preceded by the completion of a hazard study with an emergency plan.

✓ The Interministerial Committee for the Environment (CIE).

CIE is responsible for reviewing the terms of reference and reports of impact assessments and environmental audits as well as half-yearly reports of ESMP implementation, and giving opinions on their admissibility.

✓ The Divisional Committee for the Monitoring of Environmental and Social Management Plans

Instituted by Order No. 0010/MINEP of 3 April 2013 on the organisation and functioning of divisional committees for monitoring the implementation of environmental and social management plans, this committee is responsible, among others, for: (i) ensuring compliance and implementation of the environmental and social management plan, as approved by the Interministerial Committee for the Environment (CIE) and (ii) promoting and facilitating consultation between project promoters and the population for the implementation of Environmental and Social Management Plans.
2.2.2. **Parastatal and Private Organisations**

- **The Livestock Development Corporation**

The missions of the Livestock Development Corporation (SODEPA) include the acquisition, creation, administration, operation and development of all cattle breeding enterprises, production of agricultural products necessary for the breeding and processing of animal products, including slaughterhouses, cold stores and packaging workshops, as well as assistance to farmers and pastoralists in agro-pastoral development schemes and to retail meat butchers, particularly in the form of technical supervision and control of agricultural and commercial credit granted to them, according to the cases.

- **The National Veterinary Laboratory (LANAVET)**

LANAVET is a public company, whose missions include the production and supply, for a fee, of biological products (vaccines, sera and others), chemotherapy, health and hygiene for veterinary and human use and the study and epizootiological surveillance of communicable and non-destructive animal diseases in Cameroon. It will play an important role in this project with a view in particular to improving yields.

2.2.3. **Institutions at the local level**

At the local level, mention should be made of divisional and sub-divisional delegations, councils; traditional chiefdoms, civil society organisations and the local population.

2.3. **Environmental and Social Safeguard Policies of the African Development Bank**

In addition to the national regulatory framework, the project is subject to the environmental and social requirements of the African Development Bank. Thus, as part of this project to construct the Alabukom modern slaughterhouse, the following operational safeguards will be triggered:

- **Operational Safeguard 1 – Environmental Assessment:** This operational safeguard is triggered because this is an investment project subject to de facto environmental and social assessment.

- **Operational Safeguard 2 – Involuntary Resettlement:** This operational safeguard is triggered because the project will result in economic relocation for loss of assets (without physical movement of people);

- **Operational Safeguard 3 – Biodiversity, Renewable Resources and Ecosystemic Services:** This operational safeguard is not triggered because the project will not affect any area with a high potential for biodiversity or ecosystemic services;

- **Operational Safeguard 4 – Prevention and Control of Pollution, Hazardous Materials and Efficient Use of Resources:** This operational safeguard is triggered because of the existence of pollution risk and other nuisances not only during construction, but also during the operation of the slaughterhouse. Indeed, many substances (fuels and lubricants, cement, etc.), which can pollute the environment, will be used. Also, the operation of generators, many vehicles and machines, can produce greenhouse gases.
• Operational Safeguard 5 - Working Conditions, Health and Safety: This operational safeguard is triggered because of the existence of risks to the health and safety of workers when carrying out work related to site operations and when operating the slaughterhouse.

Other AfDB policies that are relevant to this project are:

• The AfDB Gender Policy (2001);
• The Policy on Involuntary Resettlement;
• The Environmental Policy.

3 DESCRIPTION OF THE PROJECT ENVIRONMENT

3.1. Definition of the Study Area

The extent of the project impact area depends on the nature of impacts considered. There will be a direct impact area and an indirect impact area. However, the description of the project environment will dwell on the direct impact area, with a view to focusing on the most relevant issues.

The first study area is that which will receive the direct effects of the modern slaughterhouse construction project. It is generally contained in the project right-of-way, as are all the borrow pits (sand, laterite, quarry), the project installation sites to be exploited and the access roads to this area and this site.

The indirect impact area will first extend to the localities, the sub-divisions crossed by the project as well as to the level of the North-West Region.

The cumulative impact area is where the project presents cumulative effects with other projects. It consists here of the site, locality and region that will host the project.

3.2. Main Physical Parameters

Location: The Project to Construct the Modern Cattle Slaughterhouse in Bamenda-Alabukom, is located in Bamenda II Sub-division. The project site is a plot of 9.32 ha in area that is in the process of registration by the local services of MINEPIA. It is about 9 km from the city of Bamenda, from the divisional delegation of MINEPIA. Alabukom is bounded by the following localities: to the north by Ntinkah, to the west by Alabukam, to the east by Alakoro, and to the south by Alatah. The project intends to match the supply of beef to the current level of demand, both qualitatively and quantitatively, and in accordance with international standards, including environmental standards. The slaughterhouse will be built north of the selected site.

Geology and pedology: Pedologically, the city of Bamenda presents mostly ferralitic soils, andosols and vertisols. These soils result from the degradation of magmatic rocks from ancient volcanism in the area. The soils are very vulnerable to mudslides and flooding. They are also very impermeable and, as a result, all the precipitated water is drained to the shallows during the heavy rains, and the river level rises rapidly.
Climate: The project area is subject to a sub-equatorial climate and is modified in some places by the altitude. The climate area is characterised by two seasons; a very rainy season that runs from March to October, and a dry season that runs from November to February.

Abundant and almost permanent rainfall throughout the year varies from 2,000 mm to 10,000 mm per year. Over the year, the temperature varies by 2.9 °C. With an average temperature of 23.0 °C, the month of March is the hottest of the year. The coldest month of the year is July, with an average temperature of 20.1 °C.

Air, sound environment and vibration: The study area, as a whole, does not harbour notable sources of emissions of air pollutants. The project site is far from built-up areas. During visits to the study area, no remarkable noise sources were identified.

Water resources: The study area is sterile from a hydrogeological point of view; only a few small shallow aquifers are to be noted around the study area and are already exploited for drinking water and food crops.

Groundwater quality: The results of physico-chemical and bacteriological analyses of the project area’s surface water indicate that the temperature measured in all water samples is below 30°C. The pH has the values of 5.17 and 5.15, respectively, which reflect the acidity of the waters analysed. These acidic pH values could be justified by the nature of soils in the study area.

Main Biological Parameters

Main plant formations: The vegetation of the project area is marked by two large complexes formed, on the one hand, by immense grassy or wooded savannahs, interspersed with gallery forest along rivers and swampy depressions and, on the other hand, by herbaceous savannahs dotted with shrub corridors that are very visible in some places. Added to this natural vegetation is a wide range of dominant (coffee trees, avocado trees, mango trees...), market garden (vegetable, lettuce) and food (maize, plantain trees, beans...) crops. Some small pockets of forests, more or less degraded by anthropic action, occupy low areas, while, beyond a certain altitude (more than 1000m), we find herbaceous savannahs.

Main Socio-economic Parameters

Population: The population of Alabukom is estimated at 800 inhabitants, with 300 men and 500 women. The village population is made up of a single ethnic group, namely the “IAAMAKONGE”. Relations in the village are peaceful; indeed, there are no land conflicts.

Transport infrastructure: Transportation is very active in the project area. The inhabitants travel regularly to the city. Transporters are mainly motorbike riders. They transport the inhabitants both within urban and rural areas and to the various villages. The fare varies between CFAF 300 and 500.

Education: There is a public primary school in Matrufon in Alabukom village around the project site. This school has two classrooms with 300 pupils. The school does not have enough classrooms and does not have a fence, on-call housing or latrine blocks. Water points are also lacking.
**Health:** Outside Bamenda, which has a regional hospital that also serves as a health district hospital, each divisional capital in the North-West Region has at least a district hospital. Around the project area are the Mankon Sub-divisional Hospital and the Integrated Health Centre. The most common diseases in the area are typhoid and dysentery.

**Agriculture:** Agriculture remains the main activity in the region. In 1997/98, the North-West Region had 161,032 agricultural families (PNVA, 1998); knowing that, apart from children, 7 people on average per family are occupied by agricultural and rural sector-related activities (MIDENO, 1984), the active agricultural population can be estimated at about 1,127,224 people or 70% of the total population, also estimated at 1,725,600 persons in agricultural statistics.

In the project area, agricultural speculations are extremely diverse. These are: maize, cassava, beans, nightshade, yam, potato, cocoyams, plantain, banana, etc. There are also fruit trees such as mango, palm and avocado.

**Electricity:** Electrical energy replaces several other common energy sources of daily life. Although the conditions of the rural population have not changed fundamentally, all divisional capitals of the region are currently connected to the ENEO network. Coming from the Edea and Songloulou power stations, this energy arrives via Bafoussam on high voltage lines of 90kv. From Bamenda, this energy is redistributed to other divisions by 30kv networks.

4 **PROJECT ALTERNATIVES AND REASONS FOR CHOOSING THE SITE**

4.1 **Project Alternatives**

- No-Project Situation

The non-implementation of this project would consist in maintaining the current situation, characterised by the proliferation of illegal slaughtering (60% of cattle) and precarious meat packaging, transport, distribution and storage conditions, and which constitutes a major public health concern.

- Rehabilitation of the Current Slaughterhouse

The current slaughterhouse, located in Bamenda III Sub-division, is experiencing a sharp deterioration in its facilities (defective water and electricity system, obsolete building, non-functional rails, etc). In addition, it has limited space and its slaughter capacity peaks at 50 cattle per day. Its rehabilitation could be considered. This presupposes the availability of adequate financial resources. But beyond financing problems, the major limitation of this solution is that, even if it is rehabilitated, the Bamenda III slaughterhouse will not be able to ensure a level of slaughter that satisfies the demand for meat on the market.

- Project Situation

The project situation will result in improved cattle slaughtering conditions, food and nutrition security as well as a reduction in the level of poverty in the area. The technical and economic performance and competitiveness of the beef sub-sector will be boosted. Thus, the project’s implementation seems to be the only viable option, and is justified by the following reasons: (i) large surface area and construction site with no surrounding dwellings; (ii) there is favourable access for livestock transport, even if this access will be developed; (iii) the site has a single uninhabited building; (iv) environmental and social constraints are minimal; (v) no historical
monument is registered around the site; and (vi) the site is located outside any protected natural or tourist area.

5 MAIN POTENTIAL IMPACTS

5.1 Summary of Positive Impacts in the Construction Phase

Beautification of the landscape: The beautification of the landscape is a positive impact. There is direct interaction. Its intensity was considered average. The scope is localised because the impact is limited to the project site. This impact is long term but is reversible.

Job creation: The project will generate many direct and indirect jobs. For direct jobs, workers will be recruited by contracting companies. The indirect jobs will be created in the area of trade in manufactured products and various consumer goods, and the provision of small services, catering, etc. that can be developed around the site.

Development of economic activities and increase in incomes: Many project activities will help create or increase incomes, both for employees and local residents.

5.2 Summary of Main Negative Impacts in the Construction Phase

Loss of vegetation cover: Construction site installation, site clearance, earthworks, external facilities and VRDs, will be preceded by the clearing of the site. This will destroy the current vegetation of the site.

Pollution of surface and ground water and congestion of river beds: Some project activities during the construction phase are likely to generate substances and/or objects that can pollute surface and ground water. These activities include mainly the use/storage of lubricants and fuels and other construction materials; maintenance of vehicles and machines, etc.

Air pollution by gases, dust and odours: Slaughterhouse construction activities will produce nuisances such as dust, fumes and odours that can affect the quality of air and/or pollute it. Dust fumes and other fine particles (sands) raised at the passage of vehicles transporting materials or liaison vehicles, will reduce visibility in some places in the work area.

5.3 Impacts during the Operation Phase

5.3.1 Summary of Main Positive Impacts in the Operation Phase

Job creation: The recruitment of workers and the operation of the slaughterhouse, will generate many direct and indirect jobs in the product distribution and processing chain as well as slaughterhouse by-products. This chain includes, among others, butchers, caterers, peddlers, restaurant owners and sellers of roasted meat and kebab.

Improvement of the nutritional status and health of the population: The operation of the slaughterhouse will ensure abundant meat supply on the market. As a result, consumers will have better access to animal proteins and increase their level of consumption with induced positive effects on their health.

Increase in agricultural and animal products: The operation of the slaughterhouse will enable farmers to have organic material for the fertilisation of fields. This will result in increased agricultural production. The supply of the slaughterhouse in cattle, with the existence
of a market, will encourage the breeders of the region and will have a potential impact on pastoral activities both in the project area and in more remote areas.

**Improvement of the well-being of the local population:** The presence of the slaughterhouse, connection to the electricity and water network and the existence of external facilities and VRDs, are likely to improve the well-being of the local population.

5.3.2. **Summary of Main Negative Impacts in the Operation Phase**

**Air pollution by gases, dust and odours:** Some project activities will produce nuisances such as dust, fumes and odours that can affect the quality of air and/or pollute it. These dust, gases and odours may even affect the health of the population residing in the vicinity of the site or along the roads used as well as employees of the slaughterhouse, with risks of contamination by respiratory and eye diseases.

**Contribution to climate change:** The burning of fuels by vehicles and other machines will cause emissions of fumes containing gases such as CO, CO2, NOx and SOx, etc., which are among the greenhouse gases (GHG) recognized as the main cause of global warming and climate change.

**Pollution and soil congestion by waste:** The solid or liquid waste generated may lead to soil congestion or pollution, if the waste treatment system provided by the project is defective. During storage and use of lubricants and fuels, and maintenance of vehicles and machines, more or less large quantities of these products can also be spilled on the ground and pollute it.

**Risks to the health and safety of employees, local residents and consumers:** Risks to the health and safety of employees and the population constitute a negative and direct impact. Its intensity was considered average.

**Risks of fires and explosions:** During the operation phase, explosions or fires are likely to occur because of the handling of flammable or explosive products during these activities. Similarly, with the use of motorised or electrical equipment, risks of explosions or fires cannot be ruled out.

**Risks of marginalisation of vulnerable people:** The operation of the slaughterhouse will require the recruitment of human resources. This recruitment should be done to ensure that does not marginalise competent vulnerable or disabled people.

5.4. **Cumulative Impacts**

Many development projects are being implemented or are announced in the North-West Region and particularly in Bamenda.

The project under study is very likely, with these projects, to generate cumulative impacts on the physical environment (air pollution, contribution to climate change), the biological environment (loss of vegetation cover, risk to wildlife and its habitat), and the human and socio-economic environment (job creation, development of economic activities, risks of explosions and fires, risk of proliferation of HIV/AIDS, improvement of the living environment and conditions of the population, etc.). All these projects, in this case, induce a significant human flow to the region concerned, in particular because of the needs in human resources, resulting in greater pressure on natural resources. The main positive cumulative impacts during the
operation phase concern the creation of employment during construction, and the subsequent increase in the incomes of the population concerned. The contribution to climate change will be a cumulative negative impact during the operation phase.
### 6.1. Summary of Specific Measures in the Construction and Operation Phases

<table>
<thead>
<tr>
<th>Nature of Impacts</th>
<th>Types of Impacts</th>
<th>Enhancement Measures</th>
</tr>
</thead>
</table>
| **1. Positive impacts** | -Beautification of the landscape | -Planting of shady and ornamental trees as well as grass on the site;  
-Signing of a waste recovery and treatment contract with a company that has an environmental permit;  
-Job creation  
-Sensitise the local population on employment opportunities;  
-Ensure transparency in the procedure for recruiting employees and give priority to local people in recruiting unskilled labour;  
-With equal competence, give priority to local people in recruiting skilled labour;  
-Establish work contracts with all employees involved in the project and register all employees at the National Social Insurance Fund (CNPS); and  
-Promote labour intensive (LI) works as much as possible  
-Development of economic activities and increase in incomes  
(i) Sensitise the local population on the business opportunities (accommodation, shops, catering, various services, etc.) offered by the project; (ii) establish a system for recovering credit given by food vendors/shopkeepers to employees.  
Improvement of the nutritional status and health of the population  
(i) Prepare and apply a Hygiene, Safety and Environment (HSE) manual; and (ii) ensure proper distribution of the products of the slaughterhouse  
Improvement of the well-being of local residents | -Job creation | -Job creation |
|-------------------|------------------|----------------------|
| **1. Positive impacts** | -Beautification of the landscape | -Planting of shady and ornamental trees as well as grass on the site;  
-Signing of a waste recovery and treatment contract with a company that has an environmental permit;  
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-With equal competence, give priority to local people in recruiting skilled labour;  
-Establish work contracts with all employees involved in the project and register all employees at the National Social Insurance Fund (CNPS); and  
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(i) Sensitise the local population on the business opportunities (accommodation, shops, catering, various services, etc.) offered by the project; (ii) establish a system for recovering credit given by food vendors/shopkeepers to employees.  
Improvement of the nutritional status and health of the population  
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<table>
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<th>Nature of Impacts</th>
<th>Types of Impacts</th>
<th>Enhancement Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. <strong>Negative impacts</strong></td>
<td><strong>Loss of vegetation cover</strong></td>
<td>- Planting of shady and ornamental trees as well as grass on the site;</td>
</tr>
<tr>
<td></td>
<td><strong>Pollution of surface and groundwater and congestion of river beds</strong></td>
<td>- Prepare and apply a Hygiene, Safety and Environment (HSE) manual; - Sensitise employees on waste management and put labeled bins on the site according to various types of waste (plastic, paper, bio-degradable, scrap metal, oil filters, diesel filters, used oil, etc); - Set up a concrete washing area for vehicles and machines with a hydrocarbon separator and build a covered and waterproof tank for the storage of hydrocarbons; - Use sawdust to absorb oil spills; - Sign a contract for the recovery and treatment of hydrocarbon waste, filters, irons, batteries and other non-bio-degradable waste with a company that has an environmental permit and report any transport of waste to the local authority of MINEPDED.</td>
</tr>
<tr>
<td></td>
<td><strong>Air pollution by gases, dust and odours</strong></td>
<td>- Prescribe in the internal regulations of the slaughterhouse, the reduction of the speed of vehicles crossing villages on earth roads; - Ensure the regular maintenance of machines and vehicles so that they generate less harmful gases, and carry out technical inspections according to the rules of the manufacturer; - Systematically shut down engines and vehicles, when not in use; and - Ensure regular collection of solid waste and regularly control the quality of effluents.</td>
</tr>
<tr>
<td></td>
<td><strong>Soil pollution and congestion by waste</strong></td>
<td>- Prepare and apply a Hygiene, Safety and Environment (HSE) manual; - Sensitise employees on waste management and put labeled bins according to various types of waste (plastic, paper, biodegradable, oil filters, diesel filters, used oil, etc); - Set up a concrete washing area for vehicles with a hydrocarbon separator, and build a covered and waterproof tank for the storage of hydrocarbons;</td>
</tr>
</tbody>
</table>
- Use sawdust to absorb oil spills;
- Sign a contract for the recovery and treatment of hydrocarbon waste, filters, irons, batteries and other non-biodegradable waste with a company that has an environmental permit;
- Report any transport of waste to the local authority of MINEPDED; and prepare a waste management plan and have it approved by MINEPDED; and
- Implement the approved waste management plan.

| Risks of fires and explosions | - Ensure that vehicles are provided with extinguishers and complete first aid kits;
- Ensure that fuel tanks are equipped with fire extinguishers, sandboxes and complete first-aid kits;
- Ensure that the technical control of vehicles and machines is done in accordance with the regulations in force and the requirements of manufacturers;
- Conduct, in collaboration with competent authorities, a hazard study with an emergency plan;
- Install a flame detection system in risk areas; install an alarm system and a water supply system for Armed Fire Faucets (RIA);
- Put "no smoking" signs in the slaughterhouse and display the telephone numbers to call in case of emergency; |
| Risks to the health and safety of employees, local residents and consumers | - Prepare and apply a Hygiene, Safety and Environment (HSE) manual and provide staff with adequate Personal Protection Equipment (PPE); and provide the slaughterhouse with an infirmary and first-aid equipment;
- Ensure the regular and optimal operation of the waste treatment unit; register employees at the National Social Insurance Fund (CNPS);
- Build the capacity of slaughterhouse staff, sensitise them on hygiene, health and safety at work and ensure their medical follow-up. |
| Risks of conflicts | - Sensitise employees and the local population on vigilance and how to behave in case of cattle theft; strengthen local vigilance committees and verify the origin of cattle purchased. |
7. RESIDUAL IMPACTS AND ENVIRONMENTAL RISK MANAGEMENT

7.1. **Negative Residual Effects**

No negative residual impact of medium or high importance is expected after the implementation of mitigation measures. Negative residual impacts are minor and not subject to special measures.

7.2. **Environmental Risk**

The complex must be protected against the risk of fire. The adaptation of the fire protection system will be designed and calculated in accordance with the standards and recommended practices, and requirements of all competent authorities. These fire risks will be controlled by the protection of electrical installations against lightening and their regular control, as well as the conservation of an isolation area from the boundaries of the closest site.

8. **ESMP Surveillance/Monitoring**

8.1. **Environmental and Social Surveillance**

The Environment Officers of contracting companies and the slaughterhouse as well as MINEPDED (Mezam Divisional Delegation), will be the main actors of environmental and social surveillance. The local population will, obviously, be associated.

The contracting authority will have to appoint an environment officer of the Implementation Unit to play this role in the construction and operation phase of the project. This officer will, when carrying out the work, verify the adequacy and effectiveness of the proposed mitigation and prevention measures. He will work with the "environment" officer and technicians of the contracting company to ensure compliance and enforcement of all proposed measures.

**Surveillance Indicators**

The operations that require environmental and social surveillance, generally, include (i) compliance with the environmental and social regulations of construction sites; (ii) the presence of mobile and/or fixed signaling in some sensitive areas (worksites, etc.); (iii) control of the management of the places of deposit of bad materials (cleaning products, cuttings, etc.) and slaughterhouse waste; (iv) the operation and rehabilitation of borrow sites and site facilities; (v) compliance with prevention measures against STIs/AIDS.

**Responsibilities of Stakeholders.**

- **Environment officer of the control mission**

  The Environment Officer of the control mission will be the main agent of environmental and social surveillance. His role will be to ensure proper implementation of the environmental and social measures. To succeed, he must work in close collaboration with his colleagues in the contracting company.

- **MINEPDED**

  MINEPDED (Mezam Divisional Delegation) plays a very important role. Indeed, MINEPDED receives half-yearly surveillance reports, which may include non-compliance sheets. In the event of environmental or social non-compliance, it ensures that corrective measures are implemented.
**Surveillance Reports:** Heads of construction sites, HSE officers of the contracting company and the control mission as well as that of the slaughterhouse, in the performance of their duties, must compile a number of daily, weekly, monthly, quarterly and half-yearly reports.

8.2. **Environmental Monitoring**

Monitoring will be done by the divisional committee, whose composition is laid down by Order No. 001/MINEP of 3 April 2013 on the organisation and functioning of Divisional Committees for the Monitoring and Implementation of Environmental and Social Management Plans (ESMP). These Committees meet three (3) times per year, at the behest of the Chairperson (the senior divisional officer), and conduct field visits to monitor ESMP implementation. The Mezam Senior Divisional Officer, with the divisional delegate of MINEPDED, will be the key actors of this monitoring. The monitoring will be carried out both during the construction and operation phases. Monitoring indicators are provided for each ESMP measure.

9. **ESMP**

9.1. **ESMP Implementation Cost**

The estimated cost of conducting and implementing the ESMP of the Bamenda modern slaughterhouse stands at **CFAF 226,954,342**. In addition to mitigation measures, this cost also includes a provision for compensation and additional initiatives.

**Summary of Costs of Environmental and Social Measures**

<table>
<thead>
<tr>
<th>Environmental and social measures</th>
<th>Cost (CFAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection of soil, landscape, surface and ground water and the fight against various nuisances</td>
<td>6,500,000</td>
</tr>
<tr>
<td>Planting of trees</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Protection of cultural and archeological heritage</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Sensitisation of the population and employees</td>
<td>25,400,000</td>
</tr>
<tr>
<td>Prevention and management of fires/explosions</td>
<td>14,200,000</td>
</tr>
<tr>
<td>Staff capacity building</td>
<td>13,580,000</td>
</tr>
<tr>
<td>Development of an environmental and social policy and a chapter on the environment in the internal regulations of the slaughterhouse</td>
<td>3,600,000</td>
</tr>
<tr>
<td>ESMP monitoring</td>
<td>4,150,000</td>
</tr>
<tr>
<td>Implementation of accompanying social actions</td>
<td>141,000,000</td>
</tr>
<tr>
<td>Compensation of property</td>
<td>13,524,342</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>226,954,342</strong></td>
</tr>
</tbody>
</table>

9.2. **Implementation Schedule**

The implementation of ESMP measures will be done according to the following indicative schedule:
PUBLIC CONSULTATIONS AND INFORMATION DISSEMINATION

As part of the conduct of ESIA, public consultations and information dissemination are requirements of both Cameroon and the AfDB. Thus, in accordance with the terms of reference approved by MINEPDED, the public consultation meeting took place in the village meeting hall in Alabukom, Bamenda II Sub-division, on 8 August 2017 at 2 p.m. The objectives of this consultation were to inform, consult and discuss with participants on the various environmental and social issues identified by the ESIA of the modern slaughterhouse construction project. This consultation was organised to integrate all stakeholders in the project, collect the various comments and proposals of the participants, and provide answers to the questions raised. Some 80 people from various stakeholders involved and project civil society actors, participated in this public consultation, including: (i) the Bamenda II Divisional Officer II; (ii) the Bamenda II Mayor; (iii) the Divisional Delegate of MINEPIA, (iv) the MINEPDED Divisional Delegate; (v) the village chief, (vi) notables, (vii) the population, and (viii) the study team made up of the consultant’s staff.

Participants widely support the implementation of the project and its fallouts for the region’s socio-economic development. However, some concerns were raised and these mainly related to: (i) the environmental impacts of the construction of the modern slaughterhouse; (ii) Risk of theft of livestock and project materials; (iii) transfer of land and compensation; (iv) employment and training of young people; (v) local infrastructure development; (vi) the social actions that will be carried out. Answers were given to all these concerns, to the satisfaction of participants. The framework ESIA will be published on the MINEPDED website (www.minep.gov.cm).

INSTITUTIONAL CAPACITIES

The Ministry of Livestock, Fisheries and Animal Industries, as the Contracting Authority of the project, will assume general responsibility for ESMP implementation. This Ministry does not have the required capacities to fully play this role. It will rely on MINEPDED, especially the Mezam Divisional Delegation. Indeed, MINEPDED receives half-yearly surveillance reports,
which may include non-compliance sheets. In the event of environmental or social non-compliance, it ensures that corrective actions are implemented. A capacity building programme is planned for the main actors, including the environmental officers of the Implementation Unit and the slaughterhouse.

12 CONCLUSION

Generally, the study highlighted that the project will have significant positive impacts in terms of social fallbacks. Similarly, the project may generate negative impacts; however, the expected negative impacts can be effectively managed, if the environmental safeguard measures set out in the ESMP are properly implemented.

13 References

Reference:

The summary was prepared on the basis of the:

- ESIA Report of the Project to Construct a Modern Cattle Slaughterhouse in Bamenda-Alabukom, August 2017;

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