**DRAFT TERMS OF REFERENCE**

**CONSULTANCY SERVICES FOR THE DEVELOPMENT OF A STRATEGIC FRAMEWORK FOR OFFICIALLY ACHIEVING BOVINE TUBERCULOSIS AND BOVINE BRUCELLOSIS FREE STATUS IN GUYANA**

1. **BACKGROUND**

1.01 Guyana is the sole English-speaking territory and one of the smallest countries situated on the northern continent of South America. Bordered by the Atlantic Ocean to the north, Brazil to the south, Suriname to the east and Venezuela to the west, the country spans a land mass of approximately 215,000 square kilometres (83,000 square miles) and has a population size of approximately 786,552 residents[[1]](#footnote-1)/. The country is well endowed with natural resources, fertile agricultural land, diversified mineral deposits, and a large acreage of tropical forests. Essentially the economy is natural resource-based, with oil[[2]](#footnote-2)/, bauxite, agriculture (mainly sugar and rice), gold, and timber accounting for most of the output in the productive sectors.

1.02 Guyana is divided into ten administrative regions with varying population densities and economic activities. Region 8 is the least populated with fewer than 6,000 people while region 4, which includes the capital, boasts a population of almost 300,000. The low population density and difficult terrain in many regions makes it costly to provide basic social services and develop infrastructure critical to support economic development[[3]](#footnote-3)/.

1.03 The poverty level within the population has declined slightly from 43.2% in 1992 to 36.1% in 2006 based on Guyana’s last official poverty assessment. A study conducted by the Inter-American Development Bank (IDB) in 2017 posits that the poverty rate had etched upwards to 41.2% measured on the basis of persons living on less than USD5.50 a day[[4]](#footnote-4)/. The country’s rural non-coastal areas in particular, are proportionately affected by poverty conditions which affects approximately 50% of the rural population[[5]](#footnote-5)/. With the onset of the COVID-19 pandemic, poverty conditions were further exacerbated as unemployment rose to 15.6% at the beginning of the first quarter 2021 before moderating to 14.5% by the third quarter of the same year. Over the past ten years the average unemployment rate stood at 13.5%[[6]](#footnote-6)/.

1.04 Notwithstanding high unemployment, Guyana’s economy growth prospects fared much better than most other countries since the start of the COVID-19 pandemic. This is primarily as a result of the offshore oil production sector which, since December 2019, has provided a significant boost to the economy and to Government revenues. While the country’s economic outlook is favourable there are critical challenges that need to be addressed if the Government of Guyana (GOGY) wishes to achieve long term sustainability in the agricultural production value chain and bolster its position as a major regional agri-food supplier.

1.05 The agriculture sector is one of Guyana’s most productive sectors in the economy as it accounted for 14.3% of Guyana’s Gross Domestic Product (GDP) in 2021 and contributed up to 13.8% of the employed labour force in 2021[[7]](#footnote-7)/. Opportunities exist for the development and expansion of the cattle industry given the country’s favourable environment for medium to large scale cattle raising. Moreover, having been certified as foot-and-mouth disease free, the country posits favourable access to regional markets. However, this status is made less effective as a means for market entry because the country has yet to be declared Bovine Tuberculosis (BTB) and Bovine Brucellosis (BB) free.

1.06 BTB and BB are both highly contagious zoonotic diseases that have a serious impact on farmers and the farming industry in Guyana. BTB in particular is infectious to cattle as well as other animal species. It is characterised by the formation of tubercles within the respiratory system and other parts of the body resulting in chronic infection and death. In many cases, its presence in local cattle is unknown and therefore the prevalence of the disease is unknown since testing is infrequent, and often due to limited supplies, capacity, and the absence of a robust surveillance and reporting system.

1.07 However, via abattoir surveillance, authorities were able to detect an average of about three cases a month via the Georgetown abattoir prior to February 2020. These cases were usually registered from regions 5 and 6. In this regard the aforementioned regions are believed to have the highest prevalence of BTB which is estimated at about 3% to 5% of the cattle population of those regions.

1.08 As it relates to the BB disease, this spreads rapidly in unvaccinated animals with affected cows aborting once after exposure, and thereafter give birth to full-term dead or weak calves. The cattle population in Guyana is not vaccinated for BB, and screening and serological tests need to be expanded since only limited testing is being conducted. Currently, the institutional capacity to conduct screening and serological tests is limited and as a result, the status on the prevalence of the disease is unknown among the cattle populations of Guyana. Testing kits to trace the presence of BB antibodies in cattle are also limited and would need an urgent boost in screening test resources.

**Farming Population Dynamics**

1.09 The Guyanese cattle farmer is traditionally a mixed farmer who keeps small herds in addition to their rice and vegetable cultivations. In most cases, farmers are landless and utilise road-side grazing, the stubble from rice harvests and communal pastures. Cattle production occurs primarily on the coastal plains as well as the Intermediate and Rupununi savannahs in the south and hence spreads across regions 2, 3, 4, 5,6, 9 and 10[[8]](#footnote-8)/.

1.10 Following from a 2020 survey[[9]](#footnote-9)/ by the Guyana Livestock Development Authority (GLDA) which captured 1,939 cattle farmers, it was revealed that large scale farmers accounted for the majority of cattle stock at 49.8% while medium, small and subsistence scale farmers contributed an estimated 15.2%, 18.2% and 9.7% respectively[[10]](#footnote-10)/. From this survey, it is estimated that there are approximately 8,160 cattle farmers based on services offered to a population of 22,179 farmers which utilise GLDA’s services.

1.11 The most recent cattle census conducted in 2006[[11]](#footnote-11)/ for regions 5 and 6 puts the estimated population between 280,000 and 300,000 heads of cattle[[12]](#footnote-12)/. This suggests that cattle production has not varied substantially from historical records. In 1987 the cattle population in regions 2–6 stood at approximately 232,789 head. By 1990 this had increased to 293,481 head country-wide. The cattle population in 1992 within regions 2–6 was reported at 261,234, which was down from the 279,234 recorded for the same areas in 1990. Hence, since 1990 the annual livestock production report has registered a relative decline in productivity of cattle production in Guyana. This could be due to the excess slaughtering of productive females, deaths due to flooding and the encroaching of cattle land by rice farmers and housing development activity. The most recent flooding event caused by heavy rains during the months of May–July 2021, brought some 1,390 farms under submersion across regions 2, 3, 4, 5, 6, 7 and 10. Regions 5 and 6 in particular accounted for some 1,269 farmers being adversely affected. All together a total of 18,847 animals were reportedly killed by the floods. This has trickle-down implications on the expansion of the cattle population based on its productive yield. It is therefore estimated that losses due to flood would have contributed to the reduction of the potential cattle population size by some 34,847 head. With this shortfall, beef is anticipated to be in short supply in the near future.

**Globally Competitive industry**

1.12 In Guyana one of the most globally competitive by-products emanating from cattle farming is ground beef. However, the industry suffers from a lack of technological investment and more care is needed to ensure that good agricultural practices (GAP) in the production cycle are adhered to. This in principle will contribute to the industry being more highly productive and competitive. For the industry to experience real growth beyond its current production frontier some key GAP pre-requisites must be in place. These include, *inter alia*, an abattoir of international standards, a national herd health programme, a farm certification programme and an improved genetic stock.

*Tuberculosis (TB) in other animals*

1.13 Fewer cases of TB are encountered in other domestic species i.e., pigs and sheep at slaughter, than in cattle, thereby emphasising the need to concentrate efforts on the control of TB in bovines. It would be imperative however, that the implementation of abattoir surveillance be enhanced, and that livestock slaughter data and TB condemnations be compiled in order to trace back to infected farms.

**Importance of BTB in Public Health**

1.14 TB is a chronic contagious disease of humans, domestic animals and almost all other species of vertebrates. The etiologic agents of the disease are bacteria of the genus Mycobacterium. M. tuberculosis is the human tuberculosis agent whereas M. bovis infects cattle. However, humans can acquire M. bovis tuberculosis from infected cattle by the consumption of raw milk. Pasteurisation or boiling of milk destroys the mycobacterium and renders milk safe for human consumption.

1.15 M. bovis infection of humans can affect the lungs (pulmonary tuberculosis) or other organs (extra-pulmonary tuberculosis). The more common form of human tuberculosis caused by M. bovis is extra-pulmonary, as the route of infection is by consumption of infected milk. Extra-pulmonary tuberculosis can manifest itself in a variety of clinical symptoms, depending on which organs are affected. There is no data however on the prevalence of BTB in humans in Guyana due to the fact that Guyana does not have the capacity to test for BTB in humans. There have been suspected cases due to the epidemiological link, but no confirmatory tests were undertaken.

**Abattoirs**

1.16 Abattoir monitoring for BTB is a key surveillance component in Guyana and will serve as a critical feature in reaching and maintaining official TB-free status. Currently the main abattoir for regions 5 and 6—the Georgetown municipal city Abattoir—is out of commission due to an incident which occurred in February 2020 causing damage to the facility[[13]](#footnote-13)/. GOGY however has implemented alternative measures to ensure that meat entering the marketplace is safe for consumption. Some of these alternative measures included the implementation of official slaughter polls for the slaughtering of animals. These polls are located across the various regions. Both veterinarians and environmental health inspectors visit these slaughter polls to ensure meat entering the marketplace is safe for consumption. Before its closure, the Georgetown abattoir processed approximately 75% of the country’s meat sold on local markets.

1.17 In the interim, two modern abattoirs are being constructed—one on the east coast to cater to cattle from regions 5 and 6 (most cattle are located in regions 5 and 6), and the other in region 4 on the east bank of Demerara for pigs and swine.

**Epidemiological surveillance of cattle**

1.18 There have been a few major interventions in the surveillance of BTB and BB in Guyana starting in 1983. From 1983 to 1985 there was a nationwide comprehensive sero-surveillance[[14]](#footnote-14)/ for BB in which a total of 3,000 samples were collected, and all tested negative for BB. In 1983 to 1987 BTB testing was done in regions 5 and 6, and the exercise identified positive cases in region 5. In 2021, 1,500 serum samples were collected and tested from bovine and all results were negative.

1.19 The epidemiology and surveillance unit of GLDA is responsible for all disease prevention and disease outbreak investigation activities. The agency was established under the Guyana Livestock Development Authority Act by the National Assembly in 2010. The Act serves to promote greater efficiency in the livestock and livestock product industry and aims to provide enhanced services in livestock husbandry, livestock health and research. It also provides for the effective administration and regulation of trade, commerce and export of livestock and its related derivative products. The agency operates under the auspices of the Ministry of Agriculture (MoA) and is a semi-autonomous organisation funded by Government subventions in addition to fees from import and export permits, fines collected for any breaches of animal health regulations, and donations from international organisations such as the Pan American Health Organisation, Inter-American Institute for Cooperation on Agriculture (IICA), and the Food and Agriculture Organisation (FAO).

1.20 GLDA has a total staff complement of 195 employees distributed across all ten administrative regions of Guyana. Presently there is a functional surveillance group which meets periodically. Also, both passive and active surveillance is done at the regional level throughout the country, however, there are some gaps in the system. Further an internal assessment of GLDA’s human resources have revealed limited capacity in epidemiology and disease risk management.

1.21 This intervention therefore aims to close identified gaps in data and record keeping management. In addition, this initiative will seek to bolster livestock screening and testing through a capacity building programme for technical and managerial staff of GLDA and will also implement a programme for the replacement of condemned livestock. This effort should create a more robust and efficient animal disease surveillance system at GLDA.

1. **OBJECTIVE OF THE CONSULTANCY**
   1. The objective of this consultancy is to strengthen the GOGY BTB and BB Surveillance programme with the view of safeguarding prospects for food security while establishing strategic linkages in the regional export markets.
2. **SCOPE OF SERVICES**
   1. The tasks to be undertaken by the consulting firm involves the development of a strategic framework for achieving officially BTB and BB Free status in Guyana and the establishment of an Export Certification Policy for the cattle industry.
3. **Task 1 - Desk review, reporting and operational workplan.** The assignment is both field and home-based (virtual). The general tasks to be completed will include, but not be limited to:
   1. Attend a virtual briefing with the GOGY and the GLDA.
   2. Conduct initial consultations with the strategic stakeholders of the Guyana cattle industry.
   3. Conduct a desk review of all relevant documentation inclusive of policy documents, agriculture strategies, operational manuals for BTB and BB eradication, research papers and like literature.
   4. Prepare an Inception Report on the findings of the existing situational analysis on the surveillance of BTB and BB in Guyana taking into account reporting and data gathering framework, existing systems in place for reducing/eradicating the presence of BTB and BB diseases and the various facilities for the promotion of cattle exports and its related products.
   5. Identify areas in which further analysis is required to give effect for the deliverables outlined in Tasks 2–5.
   6. Submit a workplan for undertaking the assignment and training outline for review.
4. **Task 2 – Conduct a baseline study and establish a database of critical indicators surrounding the surveillance of BTB and BB in Guyana.** 
   * 1. Assess critically the paper-based records and documentation management framework of farms with the view of identifying gaps in collecting and storing data across farms and regulatory agencies and make recommendations for the improvement in the data gathering framework.
     2. Assess any challenges as it pertains to the quality of data collected on the impact of the BB and BTB diseases on the cattle industry and human health.
     3. Compile a master list of various indicators necessary for the comprehensive surveillance of zoonotic diseases especially data/information that would point to an early warning/detection in order to allow for early disease control interventions.
     4. Collect all other relevant data available that covers the impact of the BTB and BB diseases on human lives and health related challenges, farmers’ livelihoods, and farm productivity.
     5. Where possible, classify data according to the various social demographic details inclusive of vulnerable groups—women, persons with disabilities and youth.
     6. Assess existing data warehousing capacity among agencies and the feasibility of adapting, expanding or building upon the existing data gathering infrastructure.
     7. Identify capacity gaps within the epidemiological surveillance operational framework and ways of addressing those gaps.
     8. Advise on the design of a monitoring and reporting system that will be used by the strategic stakeholders in the cattle industry.
     9. Identify current software used to collect and store data, examine the gaps which exists within the current administrative registers among stakeholders (including farmers) and provide recommendations for the establishment of a data warehouse which streamlines linkages among administrative registers enabling the system to be ‘*fit for use’* as part of a wider food traceability framework*.*
     10. Based on an assessment of capacities across stakeholder agencies make recommendations for the housing of a data warehouse.
5. **Task 3 - Development of a strategy for achieving Officially Bovine Tuberculosis Free status in Guyana**
   * 1. Building on the information and data gathered under Task 2 above, develop a detailed strategic plan which incorporates and ensures long-term sustainability of deliverables captured under Tasks 4 and 5 below.
     2. Establish three BTB management regions or zones (high risk, low risk, buffer zone (in between)).
     3. Deploy a package of interventions, that are flexible and informed by scientific and veterinary advice, to address all likely routes of disease transmission.
     4. Ensure that prescribed interventions are designed to minimise these risks and that they are applied proportionately to the circumstances.
     5. Develop appropriate interventions/communication packages (infomercials) to convey to the public the dangers of BTB and BB, how they are transmitted, the role that farmers, GLDA and health officials play in managing the surveillance mechanism, the benefits to the public in regard to food safety and food security and the need to bolster the country’s opportunities for integration into the regional and extra-regional value chains through its export linkages.
     6. Set targets via which GLDA can measure progress towards achieving OTF status for Guyana.
6. **Task 4 – Development of an Export Certification Policy for the cattle industry**
7. Develop a three-year road map for the successful promotion of cattle and cattle-based products in strategic markets and outline the major challenges for achieving this goal.
8. Assess the demand for cattle in regional markets taking careful note of breed of cattle demanded by the CARICOM region and select markets in the EU.
9. Establish a testing and verification programme to certify exports as BTB and BB free.
10. Develop an operational framework that will allow for the accurate certification of animals and animal products for export purposes.
11. Review guidelines and protocols established by the Caribbean Agricultural Health and Food Safety Agency for the trade in Dairy and Beef products and design standards/guidelines which aim to fill the gaps to meet World Organisation for Animal Health specifications. Following this review and given the operational framework to be designed in accordance with point (iv) above, develop guidelines and protocols that will contribute to a robust export certification framework for animals and animal products.
12. Provide guidance on the use and application of a Standard Export Health Certificate.
13. Make recommendations for improved cooperation between various Government departments especially the health, agriculture, consumer protection, and other related organisations in export certification services.
14. Make recommendations to foster the promotion of international trade in animals and animal products and ensure internationally acceptable export certification.
15. Develop proposals to maintain the professional integrity of certifying officials to ensure their authority and respect is safeguarded at all times.
16. Provide an information package to be placed on the GLDA website which serves as a ‘one-stop-source’ to inform the cattle industry of the process and requirements for export certification for their food products and to provide the cattle industry with SPS requirements for market entry into five select regional markets.
17. **Task 5 - Training and Capacity Development**
    * 1. Train cattle farmers in good agricultural practices (GAP) for livestock operations (5-day workshop).
      2. Train GLDA staff in BTB and BB Surveillance Systems and tests kits.
      3. Undertake sensitisation workshops targeting health professionals, provide guidance on the use and application of a Standard Export Health Certification framework (5-day workshop).
      4. Introduction of a web-based application system (for GLDA, Ministry of Agriculture and Ministry of Health staff) requesting certain exports certificates (5-day workshop).
      5. Develop and implement an online training module targeted at the Veterinary Medical Officers, livestock surveillance personnel, GLDA Farmers and other relevant staff of GLDA to improve the eradication efforts of the BTB and BB diseases in Guyana, the content of those modules will include, *inter alia*:

* An introduction into an understanding of the BTB and BB diseases.
* Best practices for eradication of BTB and BB diseases.
* The fundamental of GAP and how to apply them within the overall cattle industry.
* Sensitisation of measures to avoid the introduction of diseases from outside sources, such as incoming stock, visitors, and trucks or equipment.
* Identify and follow procedures around follow-up of a case.
* Determine what tissues should be used for diagnosis of the disease.
* The importance of data collection and record keeping on farm.
* Review and interpret patterns in the data especially in regard to the classification of the two diseases.
  + 1. Where appropriate, the training modules will adopt a blended learning approach through virtual sessions and on the farm illustrations. Upon completion of the training course, participants will be able to identify critical food safety issues, understand best practices in GAP methodology and develop the record keeping and verification skills needed for a robust surveillance operational plan.
    2. Administer graded evaluation/examinations as necessary to provide certification of course completion at the end of each training session.
    3. Conduct post-training evaluation and provide a feedback report and recommendations to GLDA in an effort to guide future training as may be required.

1. **DELIVERABLES AND REPORTING REQUIREMENTS**
   1. GLDA will facilitate the work of the consulting firm. The Consulting firm will report to the Project Coordinator under this Project, and will be required to submit/deliver the following:

| **Deliverables** | **When** |
| --- | --- |
| Initial report and Work plan | Within two weeks after commencement of assignment |
| Assessment report on the baseline and data gathering framework inclusive of the Master list of indicators for the comprehensive surveillance of zoonotic diseases developed and approved | 4 weeks after commencement of assignment |
| Strategy for achieving Officially Bovine Tuberculosis Free status for Guyana | 8 weeks after commencement of assignment |
| Communication strategy encompassing workplan towards public awareness and increased farmer awareness of responsibilities within management and surveillance mechanism system | 12 weeks after commencement of assignment |
| Development of an Export Certification Policy for the Cattle Industry | 20 weeks after commencement of assignment |
| Training modules and reading materials | 22 weeks after commencement of assignment |
| Delivery of capacity building exercise “train the trainers” | 23 weeks after commencement of assignment |
| Delivery of online workshops for stakeholders | 24 weeks after commencement of assignment |
| Delivery of on Farm/face to face training on workshops | 26 weeks after commencement of assignment |
| Training feedback report | Within one week of completion of each training session |
| Communication packages | 29 weeks after commencement of project |
| Project close out reports | 32 weeks after commencement of assignment |

1. **QUALIFICATIONS AND EXPERIENCE**
   1. The consulting firm should have the following experience and qualification criteria:
      1. Completed successfully at least three contract assignments related to disease risk identification and disease risk management in the last five years.
      2. Completed successfully at least three contracts involving Food Safety Management practice in the last five years.
      3. Completed successfully at least three projects/initiatives supporting the development of data warehousing, data gathering and data management.
   2. The Consulting firm shall arrange a team of experts with the requisite skills and key expertise as outlined below:

**Kex Expert 1 – Agricultural researcher /Veterinary Expert**

1. Must have a PhD, Master’s degree or Advanced University Degree in Agriculture, Veterinary Sciences, Food Science, Public and Animal Health, Biological / Life Science, Food Safety or other related area.
2. Must have accreditation in Animal welfare and Meat Hygiene.
3. Must have at least ten years’ experience in disease risk identification and disease risk management.
4. Must have proven experience in designing and implementing robust biosecurity plans.
5. Familiarity with food safety issues in the Caribbean.

**Key Expert 2 – Policy development expert in export promotion and development**

1. Must have an advanced university degree in Agriculture, Public Health, Biological / Life Science, Food Safety or other related area, Management or Economics.
2. Must have at least ten years’ experience in policy development in export promotion.
3. Experience in designing export promotion agricultural programmes for the cattle industry will be an asset
4. Must have excellent presentation and communication skills in English.
5. Excellent presentation and communication skills in English.

**Key Expert 3 – ICT Expert**

1. Must have at least a Master’s degree in Management Information Systems or related areas.
2. Must have undertaken certified training in information management systems or business analysis.
3. Must have undertaken certified training in software development.
4. Must have hands on experience in developing Information Management Systems.
5. Must possess excellent interpersonal and communication skills (written and verbal) of the English language, including the preparation of high-quality reports.
6. Must possess well-developed analytical and research skills.

5.02 The Consulting firm will report to the Project Coordinator. GLDA will facilitate the work of the consultant and make available all studies, reports, and data relevant to the Project.

5.03 This assignment shall be implemented within 190 workdays over a period of 8 calendar months.

1. / <https://worldpopulationreview.com/countries/guyana-population> [↑](#footnote-ref-1)
2. / Petroleum and gas contributed to 47% of overall economic activity in 2021. [↑](#footnote-ref-2)
3. / <https://finance.gov.gy/wp-content/uploads/2017/06/prsp.pdf> [↑](#footnote-ref-3)
4. / <https://www.kaieteurnewsonline.com/2020/03/24/poverty-levels-in-guyana-still-relatively-high-idb-report/>. This reflects the latest data available on poverty conditions in Guyana. Surveys capturing poverty conditions among countries in the Region are usual captured on a sporadic basis and is based on donor funding made available. [↑](#footnote-ref-4)
5. / <https://borgenproject.org/poverty-in-guyana-2/> [↑](#footnote-ref-5)
6. / ILO estimates [↑](#footnote-ref-6)
7. / Figures from the Bureau of Statistics latest report, quarter 3 of 2021. [↑](#footnote-ref-7)
8. /  Most of the nation's cattle are located on the coast with only around 5% found in the Intermediate and Rupununi savannahs. [↑](#footnote-ref-8)
9. / The survey was conducted with five thousand, two hundred and seventy farmers (5,270). Cattle farmers accounted for 37% of this total. Of the surveyed sample, there were 71 large cattle farmers, 331 medium-scale farmers, 407 small scale farmers, and 1,130 Subsistence farmers. [↑](#footnote-ref-9)
10. / The sample size of the cattle population represented in the survey accounts approximately for 23.8% of the country’s total cattle population. [↑](#footnote-ref-10)
11. / Wilson, S. (2011). *Mitigation and abatement analysis. Enabling activity for the preparation of Guyana's second National Communication to the UNFCCC. Final report, Ministry of Agriculture Guyana. NB: There was no further cattle comprehensive census conducted subsequent to the 2006 period.* [↑](#footnote-ref-11)
12. / Based on the figures in these regions, estimates were made for the remaining regions. [↑](#footnote-ref-12)
13. / A crane fell on the abattoir’s roof. [↑](#footnote-ref-13)
14. / Serosurveillance provides estimates of antibody levels against infectious diseases and is considered the gold standard for measuring population immunity due to past infection or vaccination. [↑](#footnote-ref-14)