



Guyana Lands and Surveys Commission

Terms of Reference for Trainer

1. Background

The Guyana Lands and Surveys Commission's (GLSC) with funding from the European Union, through the Food and Agriculture Organisation of the United Nations-European Union's Forest Laws, Enforcement, Governance and Trade (FAO-EU FLEGT) Programme is implementing the project entitled **"Harmonizing GLSC's and GFC's Forest and Land Information, mapping and verification system for management of land leases and forest concessions."**

The specific objective of this project is to harmonize forest and land information system to provide legal assurance, transparency and create compliance verification capabilities between Guyana Lands and Surveys Commission (GLSC) and the Guyana Forestry Commission (GFC).

The project is expected to achieve the following:

- Enhancement of the forest and land information system to provide legal assurance and location coordinates of relevant information and create basic verification coordination between GLSC and GFC
- Establish a protocol for safeguarding harvested forest resources to ensure compliance with forestry timber harvesting procedures in coordination with GFC
- Develop a verification system for reporting compliance measures and resolution of related issues
- Develop the capacity of field and office staff in support of the pilot demonstration activities, including the use of a global positioning system, geo-referencing of land parcels and generation of verification reports.

2. Context

a. Perspective

The GLSC has the mandate to administer and act as guardian over all public lands (State and Government Lands), rivers and creeks of Guyana.

Under the role of guardianship, the Commission shares the responsibility of leases on public lands, which contain state forests and mineral resources. The GLSC administers land for different land uses (agriculture, residential, industrial, commercial, ecclesiastical, eco-tourism on public lands using a lease agreement. The complexity of land issuance on public lands may overlap.

Agriculture leases occur within forest concession boundaries as one (1) concessionaire could legally extract state forests on state lands, and one (1) lessee may be farming on the state

lands within the forest concession. The issuance of state lands within forest concessions require an agreed protocol to prevent illegal timber from being harvested for commercial purposes.

b. Challenge

A key challenge is a lack of a shared data platform for communication of legal lease agreements, and geographic information of the related land parcels for verification of the leased boundaries. As such, the Pilot Project was conceptualized for the enhancement of GLSC's Land Information, Mapping and Verification System that would support the preparation of an established protocol, increased public awareness and verification system to prevent issues and reduce potential land use conflict with forestry concessions administer by GFC.

3. Tasks and Responsibilities

The Trainer/ Consultant in this Terms of Reference would geographically locate lease parcels with location coordinates from cadastral plans (referred to/ interchangeably as 'stock sheets') in Administrative Region 7, the pilot area for the project at GLSC.

This consultancy would accomplish training for GLSC and GFC staff to obtain high accuracy location coordinates of lease parcels on cadastral plans provided by GLSC, and conduct georeferencing of all cadastral parcels from the cadastral plans /stock sheets in office as provided by GLSC.

The Training should be conducted in the following areas:

- 1) Fieldwork in Region 7 for location coordinates of lease parcels as provided on cadastral plans
- 2) Training to georeference cadastral plans for the submission (return) of all digital georeferenced cadastral plans
- 3) Training Report with evaluation analysis and recommendations

GLSC consists of three Technical Divisions (Surveys, Land Administration and Land Information and Mapping) with inter-related work activities requiring workflows to derive parcel data. The Surveys Division conducts in-field demarcation of parcels using Global Navigation Satellite Systems (Differential and Continuous Operating Referencing Systems (CORS). However, some cadastral plans do not contain geographic or projected coordinates in Region 7, which requires an updated system built on geospatial technology to be fully consistent with a complete digital transformation of the land parcel data at GLSC. The location coordinates collected in the field with this consultancy should be transferred to a cadastral plan, which would describe the location of paals, bearing and distances, reserves, road reserves and other key landmarks.

This consultancy is specifically focused on training and collection of location coordinates, georeferencing of cadastral plans and submission of location coordinates and georeferenced cadastral plans by the consultant. Specifically, the consultant must conduct the collection of field-based coordinates for all cadastral plans provided by GLSC. The consultant is required to collect the digital cadastral plans to be provided by GLSC and work with the GLSC to identify a general location of parcel (s) in each cadastral plan. These cadastral plans provided by GLSC contain parcel information which are missing location coordinates and requires the collection of location coordinates to inform the georeferencing of plans, and digitisation of leased parcels in Region 7. All lease parcels must be located as close as possible to their actual location on-the-ground for geographic verification by GLSC and GFC.

The consultancy services also require recommendations of a digital system for all parcel coordinates for all location coordinates collected per cadastral plan.

The consultant is required to provide training to GLSC and GFC staff detailing the collection of field-based data collection from the use of geospatial technologies and equipment (Differential Global Positioning Systems, total stations, smart stations, Continuous Operating Referencing Systems (CORS), Unmanned Aerial Vehicles (UAVs)/drones, hand-held Global Navigation Satellite Systems/ Global Positioning Systems (GNSS/ GPS). The mentioned equipment are useful to improve the accuracy of cadastral plans' coordinates if there is an uncertainty of the location of the land parcels. This land parcels in this consultancy would be conducted for GLSC leased areas in Administrative Region 7- Cuyuni/ Mazaruni with highest accuracy and no more than five to twelve (5-12) feet of each paal. The consulting services include training on the use of the location coordinates of paals of each parcel provided in a coordinate system of Global Navigation Satellite Systems (GNSS) for georeferencing of all cadastral plans provided at the commencement of the consultancy.

The location coordinates parameters should be provided to GLSC in both Latitude and Longitude and Universal Transverse Mercator (UTM) coordinates and datum of World Geodetic System 1984 (WGS84). The location coordinates would resolve the need for the exchange of spatial information and monitoring and verification needs by GLSC and GFC.

The consultant should deliver for all cadastral plans provided, the location coordinates of each parcel boundary specifically of each paal, and all digital georeferenced cadastral plans with a digital copy of the location coordinates to GLSC for quality assurance verification. A report detailing the work completed and recommendations for work processes should be utilized for the work completed with a submission of all digital georeferenced cadastral plans and their related location coordinates.

The Trainer is expected to work closely with the Surveys and Land Information and mapping Divisions. Meetings to support the organisation of technical guidance and fieldwork support. The digitisation of parcels would be conducted by the Land Information and Mapping Division (LIM).

3. Definition of Outcome(s)

Outcome 1: Integrated GLSC and GFC Forest and Land Information, mapping and verification system for management of land leases and forest concessions.

Outcome 2: Improved skills and capacity within GLSC, GFC and sensitization of relevant stakeholders.

Outcome 3: Improved field data collection, monitoring and verification capability (procedurally and resource-wise).

Outcome 4: Monitoring, evaluation and visibility framework developed.

4. Requirements: The GLSC requires a Trainer/consultant with strong technical competencies in Land Surveying and Geographic Information System (GIS).

The Trainer/consultant is required for the achievement of outcomes 2 and 3 of the project and is expected to complete the following tasks:

- Conduct field-based activities in Region 7 of GLSC's leases in Guyana Forestry Commission's forest concessions to collect location coordinates using Global Navigation Satellite System using Differential and Continuous Operating Referencing Systems (CORS), Total Stations, etc.),
- Conduct training of GLSC and GFC staff specifically in-field demonstrating the collection of location coordinates using Global Navigation Satellite System using Differential and Continuous Operating Referencing Systems (CORS), Total Stations and GNSS/ GPSs)
- Collect location coordinates of at least 3 paals for all cadastral plans provided by GLSC and prepare a digital list of all coordinates corresponding to the annotations and any identification marks, text, numbers to verify coordinates of the boundaries of the lease parcels on the cadastral plans
- Conduct training on the geo-referencing of all cadastral plans provided and return to GLSC all digital georeferenced cadastral plans. These cadastral plans would have had none or insufficient location coordinates. This consultancy would provide georeferenced cadastral plans support the digitization of cadastral plans and stock sheets as part of a field-to-office workflow for supporting the GTLAS / EU FLEGT VPA.

5. Specific Requirements under the Consultancy:

Section	Details
1. Project Title	Harmonizing GLSC's and GFC's Forest and Land Information, mapping and verification system for management of land leases and forest concessions
2. Context	Given the contextual background outlined of the project above, the GLSC is seeking to enhance its capacity, process and procedures to provide the required outputs to support the VPA process as an important national stakeholder through a holistic, robust and integrated information system, improved skills and capacity, improved field data collection, monitoring and verification capability.
3. Objectives of the consultancy	The objective of the Trainer/consultancy is in keeping with the objective and outcomes 2 and 3 of the project: to improve skills and capacity within GLSC, GFC and sensitization of relevant stakeholders and improve field data collection, monitoring and verification capability. This will serve to support legal assurance, transparency and create compliance and verification capabilities between GLSC and GFC.
4. Key Stakeholders	The Key stakeholders in this process will be the Guyana Forestry Commission and Region 7 stakeholders who possess field based information.

Section	Details
5. Reporting Relationship	The Trainer/consultant will report to the Commissioner/CEO of GLSC and work under the technical guidance of the Surveys/ Land Information and Mapping Divisions headed by the Managers and in close collaboration with other technical officers of the supporting Divisions and liaise with the project team of the GLSC for administrative and logistical arrangements.
6. Key Deliverables	• Digital Georeferenced Cadastral Plans, • Digital List of at least 3 location coordinates of parcels from each cadastral plan • In-field and in-office training on the use of GNSS to obtain Location Coordinates of GLSC and GFC Staff • Office training on the Georeferencing of Cadastral Plans • Training Evaluation Forms • Training Report on all work completed with recommendations with evaluation Analysis
7. Experience	The proposal for Training consultant (individuals or firms) should consist: • Professional Surveying and / or Geographic Information Systems (GIS) Consultant consistent with similar academic qualifications and experience • A minimum of three (3) years' experience in conducting cadastral surveys, interpretation of cadastral plans and very good understanding of integration of coordinate geometry from surveying into GIS, creation of parcel data and good articulation of technical knowledge and skills and demonstrated work in similar deliverables • Experience in the delivery of technical training and practical use and application of CORs, GNSS/ GPS, Total Stations, Drones/ Small Unmanned Aerial Systems (SUAs), integrated with data collection, digital data storage, georeferencing of cadastral plans, digitisation of parcels in a GIS to achieve parcel data • Experience facilitating trainings in keeping with standards under guidance from GLSC and any other national agency • Experience working with multi-stakeholder groups • Excellent oral and written communication in English
8. Academic Qualifications	Key personnel undertaking components of the Training consultancy should possess similar or related qualifications to: • Diploma/ Degree or similar in Land Surveying, Sworn Land Surveyors Certificate, GIS or related from a reputable institution.
9. Duration	The consultancy is required to be executed within two (2) months, with continuous progress indicators and meetings with identified GLSC staff based on the agreed work plan and budget, and other contractual terms of agreement.