



WCS Expression of Interest to Conduct Biomass Surveys

September 15, 2021

1 Wildlife Conservation Society (WCS)

The Wildlife Conservation Society (WCS) is a global non-profit, with a mission to save wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature. WCS envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on earth. Working with local communities and other organizations, WCS applies science to promote species conservation and ecosystem management to improve quality of life of people.

WCS is evaluating the feasibility of cost-effective land-based carbon offset projects in East Africa. In Uganda, the intention is to blend forest protection (part of avoided deforestation) and restoration activities (enhancement of carbon stocks) to generation of verified emissions reductions focusing on the Murchison-Semliki and part of Virunga landscapes in western Uganda.

2 Call for Expression of Interest

WCS is desirous of hiring competent firms/ individual experts to conduct biomass assessment in the Murchison-Semliki and Greater Virunga landscapes in western Uganda as a critical element towards the development of baselines for the carbon project. The objective of this assignment is to accurately estimate the carbon pools in above ground biomass of the forests in the proposed intervention area as a key input to the development Project Design Document (PDD).

2.1 Key Activity and Geographical Scope of the Assignment

The consulting firm/ individual experts will have the main task of measuring biomass in living trees in randomly distributed clusters of 0.5Ha comprised of four 0.125 Ha circular plots as per prescribed Standard Operating Procedures (SOPs). The clusters are distributed in the Central Forest Reserves (CFRs) managed by National Forestry Authority (NFA), and in some cases jointly managed by Uganda Wildlife Authority (UWA).

The geographical extent starts from Budongo CFR (in the Bunyoro subregion) in the northern part of the Murchison-Semliki landscape to Kasyoha- kitomi, Kalinzu and Maramagambo forests in Greater Virunga Landscape, particularly the districts of Rubirizi, Mitooma and Rukungiri in the southwestern Uganda (**Figure 1**).



Figure 1. Spatial extent of the forests to be covered in the proposed biomass inventory

2.2 Sampling frame and sample design

The sampling frame consists of 123 random clusters in 25 targeted forests. Based on the criteria to eliminate forest edge effects¹, samples may not be taken in four forests small forests. Most of the clusters fall in the big forests such as Budongo, Bugoma, Kasyoha-Kitomi, Kalinzu and Maramagambo (**Table 1**).

Table 1. Number of Clusters per forest

| Forest Name | Area (Ha) | No Clusters | Forest Name | Area (Ha) | No Clusters |
|--------------------|-----------|-------------|-----------------------------|-----------|-------------|
| Budongo CFR | 81,684 | 35 | Kyamurangi CFR | 423 | 0 |
| Bugoma CFR | 39,949 | 16 | Maseege CFR | 938 | 1 |
| Nyabyeya CFR | 355 | 1 | Matiri CFR | 5,472 | 3 |
| Nyakarongo CFR | 3,490 | 2 | Muhangi CFR | 1,881 | 1 |
| Itwara CFR | 8,680 | 4 | Muhunga CFR | 412 | 1 |
| Kagombe CFR | 17,751 | 3 | Nakuyazo CFR | 348 | 0 |
| Kalinzu CFR | 13,984 | 6 | North Maramagambo CFR (DJM) | 29,294 | 13 |
| Kasato CFR | 2,600 | 1 | South Maramagambo CFR (DJM) | 909 | 7 |
| Kasokwa CFR | 69 | 0 | South Maramagambo CFR | 14,398 | 7 |
| Kasongoire CFR | 3,080 | 1 | Rwengeye CFR | 324 | 1 |
| Kasyoha-Kitomi CFR | 38,466 | 16 | Rwensama CFR | 122 | 0 |
| Kibego CFR | 1,275 | 1 | Wambabya CFR | 3,422 | 2 |
| Kihaimira CFR | 551 | 1 | | | |

¹ No clusters will be taken within 200 metres from the edge of the forest.

The proposed sampling unit is a 0.5 hectare cluster that is comprised of four circular 0.125 hectare plots. Each 0.125 hectare plot is nested where by smaller trees of less than 10cm DBH are measured in the 10 radius from the centre. The big trees of 20cm and larger are measured in the entire 20m radius (Figure 2).

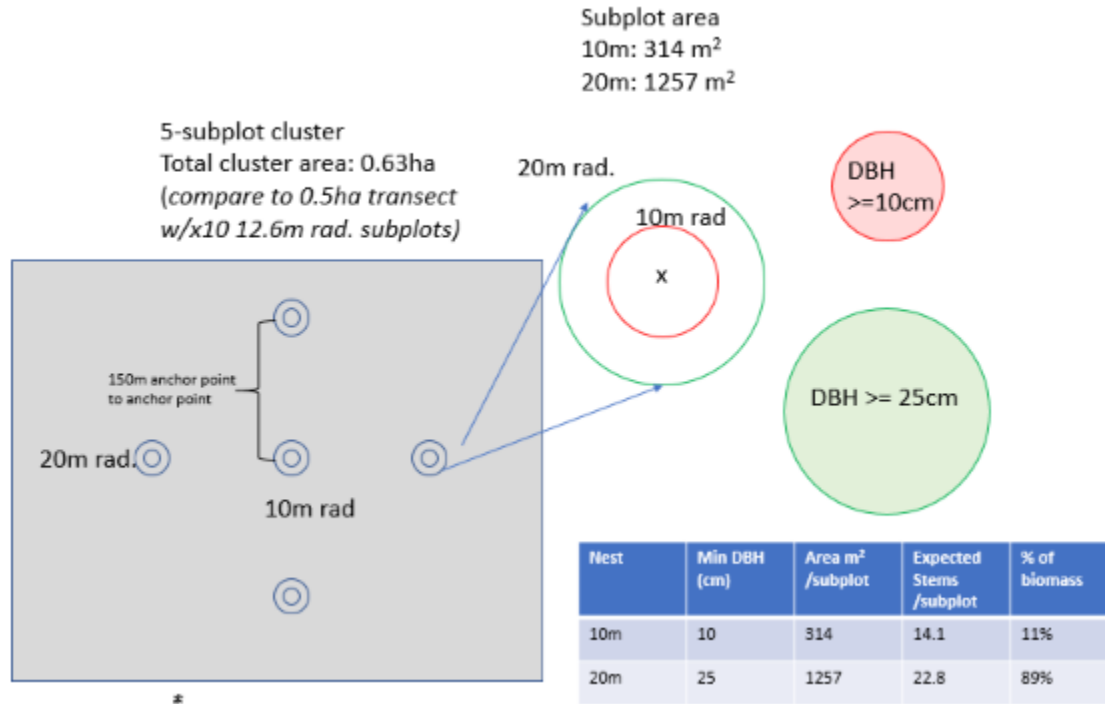


Figure 2. Left; Four circular plots on a cluster, Right; Nested plot consisting of a 10 metre radius plot (0.314ha) and an outer plot of 20 metre radius (1.257 hectare)

2.3 Requirements from Consulting Firms/Individuals

Applying firms should be in possession of the following:

1. Company profile
2. Certificate of registration in Uganda
3. Operational permits
4. Valid Income Tax Clearance and VAT registration
5. Key personnel Resumes including Biomass assessment expert/ coordinator, Senior Biomass Technician/s and Other Biomass Technicians. Refer to team composition section for details of key personnel.

Where **applicants are individuals**, WCS require applicants to submit technical and financial proposals, list of key personnel together with their CVs and references of team leader. Please refer to details on Team Composition for details on team composition.

2.4 Team Composition

Field assessments shall be implemented by five field teams that are coordinated by a biomass assessment expert. One of the five teams shall be responsible for Quality assurance and Control (QAC) and will re-measure about 10% of the total inventory clusters. Each field team will be

comprised of a minimum of five team members headed by a senior biomass technician. Other team members include but not limited to a biomass technician, two helpers and one local guides (preferably a local village council member). The following are the qualifications expected of team members.

Biomass Assessment Expert/Coordinator;

- Be conversant biomass inventory sampling designs, tree measurement and biomass computation
- Knowledge of the implications of sampling errors and systematic errors and blunders to the overall estimation of biomass stocks
- Experience in having coordinated or carried out biomass assessment in the last 10 years is a requirement
- Knowledge in use of digital devices and electronic data transmission in forest inventory is a requirement.
- In addition to the above, be conversant with biomass measurement Quality Assurance/Quality Control protocols and procedures. These include but are not limited to the following;
 - Data Entry checks
 - Double checking to make sure that all data are correctly and completely filled
 - Verifying the number of trees recorded
 - Field measurement error estimation where a sub sample of the clusters are re-measured for the estimation of the measurement error
 - Procedures for species identification for species that are not able to be identified in the field

Biomass technicians;

- Be conversant with field Safety Including Cardiopulmonary resuscitation (CPR) lifesaving technique that are useful in many emergencies
- Working knowledge of mobile digital devices (e.g. smart phones) for data capture, storage, transmission (to cloud server) and archiving
- Advanced navigation skills in map reading and navigation using GPS and applications on digital devices
- Able to walk long distances (10km plus) in both dense forest and savannah ecosystems
- Conversant with standard field plot establishment techniques including slope angle correction and plot labeling techniques
- Use of and calibration of distance measuring devices both laser and sonic instruments such as Haglöf Vertex
- Use and calibration of height measurement instruments
- Conversant with DBH and Height measurement procedures on flat terrain and sloping terrain.
- Conversant with DBH and Height measurement procedures for leaning trees, forked trees, buttressed trees
- Knowledge of tree species in rainforest and savannah ecosystem (at least 70% of the common species).

3 Expected outputs

3.1 Forest inventory field report

The field report shall provide the following information;

- A narrative of how the work was executed including an itinerary of the field operations, a summary of clusters measured and a list of field staff with names, responsibilities and contacts (mobile phone number and email address where applicable).
- A list of field inventory tools and how they were used with special focus on quality control measures
- For any clusters that may not have been measured, a reason for each of the clusters that was not measuring is required
- A narrative of Quality Assurance and Control measures supported by data validation report

3.2 Forest inventory data base

All field inventory data is to be transmitted regularly to a cloud server. WCS is aware that due to poor internet connectivity in some areas, it might be difficult to transmit data on a daily basis. However, the client shall ensure data from each team is transmitted within a period not exceeding three days after measurement. It is the responsibility of the client to account for field measurements per team per day. A QAC database is required in addition to the main biomass database.

4 Submission of EOI

Interested applicants should submit;

1. Required technical documents including a cover letter and a proposal (Maximum 5-10 pages) detailing the proposed approach and work plan, including other documents outlined in section 2.3.
2. Financial proposal with a breakdown of professional fees and other direct costs, taxes.

Proposals should be addressed to;

The Chairperson Procurement Committee,
Wildlife Conservation Society,
P.O Box 7487,
Kampala.

Clearly marked submissions with a subject line, "PROPOSAL FOR BIOMASS SURVEY" should be sent by email ONLY to wcsuganda@wcs.org with copies to phatanga@wcs.org not later than Friday 27th September, 2021.