

## Terms of Reference

### Supporting surveyors for the boundary opening of Central Forest Reserves

#### 1 Background

The African Wildlife Fund is seeking registered surveyors to support the National Forestry Authority (NFA) with boundary opening of Uganda's Central Forest Reserves.

The National Forestry Authority (NFA) is a semi-autonomous government organization established under the National Forestry and Tree Planting Act (2003) to sustainably manage all Central Forest Reserves (CFRs) in Uganda, and to promote and develop private forestry. NFA manages 506 CFRs with a combined boundary cutline of approximately 9,350km. NFA has an ongoing program of re-opening the boundaries of CFRs through re-surveying and remarking them to ensure that they are clear to the general public, in order to address encroachment and land conflicts.

#### 2 Scope of work

Due to the large amount of work that boundary reopening entails, AWF is seeking to hire registered surveyors to support the NFA Inventory and Survey Unit (ISU), with its program of boundary opening.

##### 2.1 Detailed description of work

Each surveyor will be responsible for carrying out the following survey work for each CFR boundary they are assigned, coordinating closely with the NFA Inventory and Survey Unit and the NFA staff in the NFA range(s) in which they are working:

- i. **Reconnaissance survey:** identification of labour requirements, security issues and available survey controls. in order to generate preliminary survey coordinates for cut lines, boundary pillar locations and identification of natural permanent features: these coordinates and features shall be confirmed by NFA ISU staff before boundary opening and pillar installation proceeds. All existing boundary marks identified and found firm during the reconnaissance survey shall be identified using a GPS/GNSS and logged digitally, with a description of their dimensions and status of maintenance along with photos (e.g. requiring replanting, replacement and/or re-painting). Additionally, all evidence of encroachment along the CFR boundaries encountered during the reconnaissance survey shall be noted and logged using a GPS/GNSS. Carried out jointly with NFA ISU and range staff.
- ii. **Boundary opening with installation of pillars:** the boundaries of the CFRs shall be marked using visible concrete pillars supplied by NFA. The pillars shall be planted at all corner points of the boundary. Where distances between corner points exceed 200 metres, pillars shall be planted at equally spaced intervals along straight boundary cut lines in not greater than 200 metre intervals, maintaining line-of sight visibility of the next and previous pillars. Where the distance between corner points is less than 200 metres, the pillars shall be planted at the corner points only unless extra pillars are required to maintain line-of sight visibility between pillars (due to the terrain). The planting of the pillars will be such that 0.5 metres of the pillar shall be buried underground with

the protruding bottom rebars maintained at an angle of 90 degrees to the pillar, and 1.0 metres shall remain above the ground surface. All pillars must be firm, stable and immovable after planting, with each pillar receiving a final coat of white water-proof paint after planting, with the impressed letters “NFA” on each pillar painted in waterproof black, facing the outer-edge of the cutline. Pillars to be supplied to site by NFA, survey work and pillar placement to be carried out by the service provider, work to be inspected and signed off by NFA ISU.

- iii. **Boundary opening with installation of stone cairns:** Where boundary pillars cannot be installed because of rocky terrain, at sites agreed with the NFA ISU, cairns or other structures (such as concreted markers) may be prepared and marked based on a standard provided by NFA. Survey work, cairn and other structure placement to be carried out by the service provider, work to be inspected and signed off by NFA.
- iv. **Cutline clearance:** A three-metre wide cut line shall be cleared along the demarcated boundary with all shrubs, bushes and trees – except where large trees do not obscure the line of sight – cleared and removed to the CFR (inward) side of the cutline. Cutline clearance work to be carried out by the service provider, work to be inspected and signed off by NFA.

## 2.2 Quality Assurance

The surveyor will be required to ensure that the quality of work carried out in surveying and marking the boundaries is in compliance with the Survey Regulations and Standards in use by the Department of Surveys and Mapping as well as any further quality assurance directions given by NFA ISU in line with this scope of work.

## 3 Reporting

### 3.1 Preliminary Job Record Jacket (JRJ)

A preliminary Job Record Jacket (JRJ) for each CFR containing a list of all preliminary numbered coordinates (Arc 1960 UTM EPSG 21096) and boundary plan maps at 1:50,000 scale, cadastre maps at 1:10,000 and 1:50,000 and supporting information including the locations of pre-existing boundary marks (pillars and cairns) as well as signs of encroachment together with any other information as specified by NFA ISU shall be submitted to NFA following the reconnaissance survey of each CFR.

### 3.2 Progress Reports

The surveyors will produce and submit monthly progress reports to NFA detailing the progress of their work. Where progress has not been achieved as planned, NFA will respond in writing with instructions on necessary remedial measures.

### 3.3 Completion Job Record Jacket (JRJ)

A Completion Job Record Jacket (JRJ) containing a list of distances, bearings and three-dimensional coordinates, in Arc 1960 UTM (EPSG 21096) approved by NFA, a boundary description and a boundary map at a scale specified by NFA (depending on the size of the CFR), together with any other information as specified by NFA in writing – not limited to changes in the size, shape and location of any boundary or part thereof, and incorporating agreed comments arising from pre-submission discussions including recommended improvements to survey methodology, will be provided to NFA in two sets ready for submission to the Commissioner of Surveys and Mapping.

### **3.4 A completed digital boundary plan/map and digital copy of the Completion JRJ**

A completed digital boundary plan map layout on A1 size in jpg and pdf formats. The digital data should be submitted in '.csv', '.shp', '.kml' and '.CAD' formats provided on a USB-disc, accompanied by detailed metadata, together with a soft copy of the same data and information as provided in the completion JRJ.

## **4 The role of NFA**

### **4.1 Community and stakeholder sensitization**

The Survey Unit together with NFA Range staff shall sensitize the community in preparation for boundary opening at all levels (District, Sub-county and community levels) directly and/or through another appointed agent before the reconnaissance survey is due to be carried out (as agreed with the service provider). The reconnaissance and boundary opening survey work will not be permitted to proceed without stakeholder sensitization having been first carried out.

### **4.2 Security**

NFA shall make reasonable efforts to provide security (Environment Police Force) for the service provider survey team during boundary opening work. The cost of this security shall be borne by NFA.

### **4.3 Supervision, Quality assurance and control**

NFA shall supervise the work of the service provider and may inspect site work at any time without notice. Quality assurance and control will be undertaken by NFA to check for compliance with the agreed requirements on the quality of boundary work in the field, and on the datasets and the reports submitted. The standards set down by NFA in coordination with the Department of Lands and Surveys must be met to qualify the works done as satisfactorily completed, prior to payments being made to the Service Provider by AWF at the instruction of NFA and the NFA US Forest Service (USFS) Technical Advisor.

### **4.4 Client Liaison and Feedback**

The surveyor shall liaise with the NFA ISU Coordinator on all matters related to the assignment. The Service provider shall work closely with the BSO supported by a technical team drawn from NFA, USFS and AWF, the Department of Lands and Surveys, and the Ministry of Lands, Housing and Urban Development (MLHUD). The service provider shall provide constructive feedback on all aspects of the assignment and issues raised by NFA in writing for effective delivery of services.

### **4.5 Data security and backup**

NFA shall have the responsibility of organising and securing all the accruing data and information in form of databases and in multiple locations to ensure failsafe redundancy.

## **5 Qualifications and experience**

### **5.1 Experience and qualifications**

The service provider shall meet the following minimum requirements:

- i. Experience of having successfully carried out two assignments of at least 20km of cut-line survey work of a similar nature, type and scope within the last three years, together with the names and

contact details of the clients / employers for whom the survey work was carried out. The clients / employers should expect to be contacted for further information on the overall quality and timeliness of work carried out.

- ii. Qualifications of minimally possessing a bachelor's degree in surveying with 5 or more years professional experience, and a member of the Surveyors' Registration Board with a licence to practice in Uganda.

## **6 Terms and conditions**

Surveyors shall be hired as service providers on a six-month renewable service provision contract by AWF. They shall be accountable to the NFA USFS Technical Advisor and liaise closely with the Coordinator of the NFA Inventory and Survey Unit, both of whom shall approve all work carried out to the requisite standard. Successful applicants shall be subject to a one-month probation period.

Surveyors will be paid at an agreed pro-rata rate for each kilometre of boundary that they open to the specified standard as per the Scope of Work, including all reporting and documentation associated with each Central Forest Reserve opened. In addition, a standard NFA field allowance will be paid while the surveyor is in the field. Transport and field equipment as per NFA standard practices will be provided by NFA and/or AWF.