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Resilient nations.

## TERMS OF REFERENCE

<b>Project Name</b>	Supporting Climate Resilience and Transformational Change in the Agriculture Sector in Bhutan
<b>Title of Assignment</b>	Technical Specialist for Irrigation Design & Implementation
<b>Contract Type</b>	Individual Consultant – Field Surveyor (2 nos.)
<b>Duty Station</b>	Agriculture Engineering Division, Department of Agriculture, Thimphu
<b>Duration of Contract</b>	1 year and renewable based on performance
<b>Pay Scale</b>	Nu. 35,000 (lump sum)

### 1. BACKGROUND

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The Royal Government of Bhutan (RGoB) is implementing Global Climate Fund (GCF) Project titled “*Supporting Climate Resilience and Transformational Change in the Agriculture Sector in Bhutan*”. The investment program, seeks to enhance the resilience of smallholder farms to climate change, especially variation in rainfall and frequent occurrence of extreme events, through three complementary outputs of which integrating climate change risks into water and land management practices that affect smallholders is one of the important output/component. Given that the reliance on rain-fed practices is also of limited use in the face of increasing rainfall variation, this component will realign four irrigation schemes towards reliable water sources to support farmers experiencing water scarcity during the dry season. The project will also be used to strengthen the resilience of 32 existing open earthen canal irrigation schemes against extreme events. GCF resources will also be used to procure and install water harvesting through construction of small earthen check dams and ponds, and earthen storage tanks as small scale reservoirs for irrigation water supply during dry periods and drought. Other water saving technologies such as drip irrigation and sprinkler irrigation will also be supported for high value crops such as vegetables and horticulture crops.

In order to accelerate the implementation of the irrigation schemes under the project, the Component Manager (Irrigation) will need the support of surveyors to expedite the survey works which is currently lacking due to dearth of dedicated people in the Dzongkhag to conduct the detail survey work of the irrigation schemes. In this context, the Project Management Unit (PMU), Green Climate Fund (GCF) Project, GNHC is looking for 2 nos. of Field Surveyor to provide technical backstopping and support to the Dzongkhag engineers to undertake detail survey of irrigation schemes under the project.

### 2. OBJECTIVES OF THE ASSIGNMENT

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The overall objective is to:

- To undertake topographic survey of irrigation schemes under the project, so that best and most economical alignment is chosen.



- Provide technical backstopping to engineers of Agriculture Engineering Division (AED) and project districts in the field of engineering/topographical/geodetic surveying.

### 3. SCOPE OF WORKS

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The responsibilities of the Surveyor include:

1. Carry out detail topographic survey of the alignment of the proposed irrigation schemes including the existing channel under the project. The detail survey work shall encompass the following but not limited to;
  - Establishment of control points evenly/uniformly throughout the survey area.
  - The coordinates system shall be based on National Reference System (Drukref Local Coordinate System)
  - The structure of the survey stations should be as per the requirement of the client.
  - All notable physical features both man-made and natural which shall be, but not limited to, buildings, monuments, places of worship, posts, existing roads and stream/river/canal crossings, cross-drainage structures etc. which are found on the ground should be surveyed.
  - LISCAD and AutoCAD Software of compatible versions shall be used for data processing.
  - Contour survey must be carried out in consideration to finally generate a map/data.
2. Carry out feasibility study along with team of engineers from AED as well as Dzongkhag before the detail topographic survey.
3. Observe proper protocols while dealing with public with regard to issues related to land.
4. Provide surveying backstopping on survey data editing and software usage with proper feature coding to the engineers.
5. Prepare a final report and maps for submission to Client.
6. Edit data on daily basis during the field work and maintain field book for daily field observations instrument height, reflector's height and any other related information should be noted.
7. Carry survey equipment to the site and ensure that the continuity of the daily work without leaving any details.
8. Ensure safe keeping of surveying equipment, cadastral maps, survey reports, etc.
9. Engage in various office activities such as submission of field records, digitisation and updating of cadastral maps, plotting and printing of documents for field reference and fair drawing.
10. Conduct any other task/assignment needed for successful completion of the consultancy's objectives.



#### **4. IMPLEMENTATION MODALITY & ACCOUNTABILITY**

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The surveyors shall report directly to the Chief Engineer, AED, for day-to-day work and the Project Director, GCF PMU, GNHC for overall work coordination. The surveyors will be stationed in the Agriculture Engineering Division (AED), Department of Agriculture, Ministry of Agriculture & Forests, Thimphu, Bhutan. AED will provide: furnished work space, office internet access and phone facilities, printing facilities, and administrative support, etc.

The surveyors will work closely with GCF Project Component Manager (Irrigation) and other relevant staff designated. The work will be executed through a combination of office work and site visits as required. They will report from time to time on progress of the work and on any other issues during the course of implementation.

#### **5. WORK STATION**

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Thimphu, Dagana, Punakha, Samtse, Sarpang, Tsirang, Trongsa, Wangdue, Zhemgang Districts but will require extensive travel to remote areas of the identified geogs/chiwogs.

#### **6. ASSIGNMENT DURATION**

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The surveyors will be recruited for an initial period of 12 months and renewed based on the performance their after.

#### **7. QUALIFICATIONS AND EXPERIENCE**

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##### **7.1 Required qualifications and experience**

1. Diploma (400 Surveying Level Course) with a minimum of 3 years professional experience in the relevant field (topographic surveying).
2. Must be thoroughly familiar with all the large scale topographic procedures using GPS, Total Stations, Liscad Softwares and AutoCAD.
3. Should have practical experience in carrying out topographic survey with a proven record of supervising, organizing, managing project preparation and executing topographic survey of national roads/farm roads/irrigation channels.
4. Language requirement- Good written and oral competency in English and Dzongkha



## 7.2 Desired qualifications and experience

- Ability to work under pressure and to coordinate and link with multi-disciplinary experts; and willingness to travel frequently to project sites.
- Must be willing to travel extensively and stay in remote areas.

## 8. CONTACTS/PARTNERS

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- Agriculture Engineering Division, Department of Agriculture (DoA), Ministry of Agriculture and Forest (MoAF).
- Project Management Unit, Green Climate Fund (GCF) Project, GNHC.
- Dasho Dzongdag, Dzongkhag Engineer, Dzongkhag Agriculture Officer, Site Engineer, Agriculture Extension staff, Gup, etc., of Project Dzongkhags.

## 9. REMUNERATION

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The client will pay the surveyor a minimum lumpsum amount of Nu. 35,000 (Thirty five thousand only) per month. With an annual increment of 7.5% and daily allowance of Nu. 1,250 per day.

The interested qualified candidates must submit the following documents to the HRO, GNH Commission, Thimphu. The documents must be submitted in a clearly labelled Envelope **“Expression of Interest for the Field Surveyor”** not later than 5 PM, on 23rd October 2020, to the address mentioned above.

For further inquiry, please contact Mr. Karma Wangdi at 17378087 or email [karmawangdi@gnhc.gov.bt](mailto:karmawangdi@gnhc.gov.bt). Only shortlisted candidates will be contacted for the selection process.

1. Civil Service Employment Application Form
2. Detailed CV
3. Copies of Academic transcripts and Certificates
4. Motivation letter
5. Valid Security Clearance
6. Reference/Support documents (relevant training documents).
7. Valid Medical certificate certifying fitness to take up this assignment
8. Copy of Citizenship card
9. Copy of extra-curricular activities
10. No Object Letter, if employed.