

## **Terms of Reference**

**Service Reference: Development of Animal Genetic Data base system ([www.biodiversity.bt](http://www.biodiversity.bt))**

### **1. Background**

The AnGR program was established in 2005 to oversee ex-situ and in-situ conservation of AnGR. The National Gene Bank for AnGR was established as an ex-situ conservation facility with initial assistance from the Government of the Netherlands and RGoB. The Gene Bank was upgraded to a fully functional facility through the support of the Integrated Livestock and Crop Conservation Project (ILCCP) funded by UNDP-GEF. The Section also collaborates with the Department of Livestock and Dzongkhag Livestock Sector to promote in-situ conservation of AnGR through technical support for improved management practices, production and marketing, education and awareness on importance of AnGR. Currently, the AnGR in-situ conservation activities are mostly supported through the ILCCP Project.

#### **1.1 Introduction to gene-bank**

National genebank is repositories of genetic material stored in liquid nitrogen a  $-196^{\circ}\text{C}$  at this temperature, the genetic materials can be stored indefinitely, and after thawing, following a appropriate protocol, be introduced in animal breeding. For semen, this procedure is straight forward, following everyday practice. Implanting embryos is somewhat more involved, but also a standard practice in many species, while reconstruction of animals through nuclear transfer and cloning on the basis of somatic cells is still tedious and expensive.

#### **1.2 Database and Documentation for gene bank**

Proper and accessible documentation is vital for the future use of any stored gene bank material. A primary focus in the documentation of samples in a gene bank is development, implementation and utilization of a database. A database is essential because it is the management system that will catalog, summarize, query and retrieve information required to establish and operate the gene bank. Basic information about gene bank collections should be easily accessible without the need for any additional information from outside the database. Gene bank management relies on the database to manage routine genebank operations (quality control testing, sample identification, sample location, current inventory, etc) and to support management decisions. The database serves as the

primary conduit for receiving information about samples in the collection. The outflow of information is just as essential as incoming information because potential requestors have a way to view the collection and make choices about their request. To insure the broadest access to the information contained in the database it needs to be linked to the internet. Addition of internet access facilitates awareness about the country's genetic resources programme and makes it easier for the diverse users to access collection information and make use of the germplasm collection. It is absolutely critical that in the establishment of the gene bank the database is recognized as being of central importance, both in terms of day-to-day management but also allowing potential users of the gene bank to access what is current contained in the collection.

## **2. Objectives**

TO develop an interactive Web Application system to keep track of animal germplasm information for Animal Genebank, National Biodiversity Centre (NBC), Thimphu, Bhutan.

## **3. Assignments**

The system proposed shall be completely mobile responsive and it is to operated and utilized by relevant NBC officials for keeping proper and clear track record of the different germplasm information of animals under study.

- a. Review the current data recording system used at the Animal Genebank at National Biodiversity Centre and develop based on the current system
- b. Submission of the draft to NBC for review and incorporation of comments
- c. Presentation of information system to NBC.
- d. Finalization of the information system after incorporation of the comments.

## **4. Period of Engagement**

The assignment shall be completed in **Four Weeks**.

## **5. Qualification and skill requirements of the consultant**

- Degree in Mass Communication/IT/Bioinformatics/Natural Resources Management/Environment/Media.
- Sound knowledge on ICT/media and general biodiversity.
- Experience in development of similar information system/ Database.

## **6. Proposal Documents to be submitted**

The interested firm/individual should submit the financial proposal along with the all relevant documents supporting your qualification, experience and competence to carry out the task assigned by **27<sup>th</sup> April, 2020**.

## **6. Evaluation of the bids**

The evaluation committee will evaluate the proposals and select a consulting firm based on the combination of following factors:

1. Qualification and experience
2. Track record of successful completion of past assignments.
3. Reasonableness of the cost quoted for the services requested obligation to work within the required deadlines with quality services.

## **7. Price and Payment**

- I. Unless otherwise stated, payments are in Ngultrum and are exclusive of all payable taxes.
- II. Discounts should be included on quoted prices, if any.
- III. Quoted price would be open to negotiations.
- IV. Full payment shall be made as per the contract agreement.

## **9. Deliverables**

1. Finalized version Animal Genebank Information system.

