

## TOR for Expert

Programme:	Intergrated Biodiversity Management in the South Caucasus
PN:	15.2101.2-006.00
Assignment:	Support in statistical analysis and data management of forest inventory data in Georgia
Period:	<b>01 June 2018 – 30 November 2018</b>

### 1. Brief project information

The biodiversity of the South Caucasus is of global importance, but the huge variety of species and the proper functioning of the ecosystems are under threat. There is considerable pressure from the exploitation of natural resources by the local population, private industry and governments.

In each of the three countries of the South Caucasus – Georgia, Armenia and Azerbaijan –National Biodiversity Strategy and Action Plans (NBSAPs) and initial sectoral strategies for managing biodiversity and ecosystem services are in place. Up to now, however, those are unable to withstand the challenges posed by the conflicting interests of different sectors (forestry, pasture farming, agriculture, nature conservation and tourism). There is a lack of coordination between the various state and non-state actors and population groups (e.g. shepherds and farmers). In addition, there is not enough reliable data available on the different sectors to support sound planning and decision-making processes.

Within the framework of the Caucasus Initiative of the German government, the programme cooperates primarily with the ministries of environment in the three different countries of the South Caucasus. The programme follows a multi-level approach. At national level, it promotes the development or revision of biodiversity strategies and regulations, particularly in forest and pasture management, and in erosion control. The experiences gained from pilot measures at district, municipal and local levels are incorporated into this process. As part of these pilot measures, relevant actors are provided with the skills needed to implement integrated approaches for sustainable management of biodiversity and ecosystem services.

The module objective of the programme is to promote better coordination of biodiversity and ecosystem services management across sectors on the basis of solid data. The programme comprises four areas of intervention with the following objectives:

- Instruments and coordination processes for the sustainable management of biodiversity and ecosystem services at local level are tested.
- The implementation capacity of line ministries, their subordinate bodies and of training institutions regarding the management of biodiversity and ecosystem services is improved.
- The perception of the general public towards the importance of biodiversity and ecosystem services is more positive.
- The regional exchange on sustainable management of biodiversity and ecosystem services is improved.

IBiS follows up on the achievements of the “Sustainable Management of Biodiversity, South Caucasus” programme, and is due to run four years (from December 2015 to November 2019). The programme is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of

the German Federal Ministry of Economic Cooperation and Development (BMZ) with co-funding of the Austrian Development Cooperation (ADC) in Armenia and Georgia.

## **2. Context**

The availability of valid robust data on forest is crucial for informed policy and strategic decision making as well as for planning of forest management activities. To this aim, the Ministry of the Environment Protection and Agriculture of Georgia (MoEA) is aiming to set up a modern forest monitoring system. A Forest Inventory, Monitoring and Planning Working Group (FIMP-WG) was set up in MoEA which is responsible for the planning, implementation and evaluation of a National Forest Inventory (NFI), which will serve as base-line for forest monitoring and provide planning data for more detailed Forest Management Inventories (FIMs) in Georgia.

Practical work and data acquisition will start in spring 2018, consequently support in statistical data management, data analysis and reporting of the NFI and FMI is needed to ensure the acquired data provides the desired information.

For data acquisition, management, analysis and reporting, the software modules of Open Foris, which are provided by the Food and Agriculture Organisation of the United Nations (FAO), is used. The software (Open Foris Collect and Open Foris Calc) is based on a Postgres database. Visualisations are realized with an integrated component (Saiku). Data aggregation and calculation is conducted via the R software environment and will require writing extensive custom R-scripts. FAO provides extensive technical support on the software modules.

## **3. Objectives and tasks**

The objective of the assignment under this contract is to support the data management and analysis processes as well as the provision of expertise in statistics. In particular, the expert shall fulfill the following tasks:

- 1. Support the design and development of a data management system for the inventory**
  - Consult the development of the relevant databases with regard to data analysis procedures
  - Define of analysis procedures, queries and visualization for data cleansing
  
- 2. Data analyses, visualization and result calculation**
  - Define analysis procedures for cluster-based sampling design (NFI)
  - Define analysis procedures for stratified sampling designs (FMI)
  - Translate the defined information needs in R-scripts and relevant queries
  - Translate the relevant estimation designs into R-scripts
  - Aggregate data to different strata levels
  - Visualize results in Saiku and other relevant formats (MS Excel, etc.)
  - Provide analysis scheme for design optimization (inter-cluster variance, etc.)
  - Optimize data management and analysis procedures in cooperation with FAO experts
  
- 3. Institutional memory and capacity development**
  - Conduct continuous trainings in general statistics, statistical sampling design strategies, data analysis with the FIMP-WG and/or other relevant target groups
  - Provide hands-on trainings on querying and visualization using the relevant software and data to an extended group of experts
  - Network with national and international research institutions to exchange experiences and approaches and build-up of technical support
  - Elaborate extensive documentation of principles and approaches in statistical sampling and data

analysis and user manuals for the applied software packages

#### **4. Expected outputs are the following:**

Expected outputs are:

- Optimization of database structure for analysis
- Configuration of the analysis software (R and Saiku)
- Basic and continuous trainings for inventory experts within the given time frame
- Documentation of the software modules and analysis procedures

#### **5. Time frame and work schedule**

Up to 120 days from 01.06. to 30.11.2018. The expert will sit in the Forest Inventory and Management Planning Working Group.

#### **6. Miscellaneous**

Required expertise of the expert:

- Profound expertise in statistics and R (Bachelors degree in statistics or related field)
- Profound expertise in Database management (Postgres, SQL, etc.)
- Experience in analysis of large datasets
- basic knowledge of environmental science, forestry, nature management is an asset

Languages: Georgian and good command in English

Willingness to learn and work in an international team

Handicapped persons will be given preference to other equally qualified applicants. As an equal opportunity employer, we highly encourage applications from women.