

## Three years report

Environmental Services Project

National Forest Inventory Capacity Building, Albania

ESP-CS-QCBS-01

*September 30, 2019*



## Acronyms used in the report

ANFI	Albanian National Forest and Pastures Inventory
ANFICB	Albanian National Forest Inventory Capacity Building project
ASIG	State Authority for Geospatial Information (ASIG)
ESP	Environmental Services Project
FSF	Faculty of Forest Sciences, Tirana
GIS	Geographic Information Systems
LIDAR	Light Detection and Ranging (a remote sensing method)
MTE	Ministry of Tourism and Environment
NAPA	National Agency of Protected Areas (Albanian acronym AKZM)
NEA	National Environmental Agency
NFI	National Forest Inventory
OF	Open Foris
QA	Quality Analysis
SFA	Swedish Forest Agency
SLU	Swedish University of Agricultural Sciences

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## 1. Introduction

On September 27, 2016 an agreement on specified consultants' services was made between the Albanian Ministry of Environment, Client (Currently the Ministry of Tourism and Environment) and a Swedish consortium consisting of the Swedish University of Agricultural Sciences and the Swedish Forest Agency (SLU/SFA), Consultant. The agreement concerned domestic capacity building for the Albanian National Forest and Pastures Inventory, ANFI, and covered a 3 years period (October 2016 - September 2019). The ANFI Capacity Building (ANFICB) is a subproject within the Environmental Services Project, ESP, at the MTE (Box 1)

### **Box 1. The National Forest Inventory Capacity Building Project and its objectives**

The Albanian Government has commissioned an international consultant team to support its National Environmental Agency (NEA) in a project aimed at improving its capacity to design, plan and implement *a national forest and pasture inventory system*.

The aim of the system would be to continuously support the government in its national decision and policy making, sectoral strategic planning and international reporting over time. The general objectives of the ANFICB project were as follows:

**Objective 1:** Build MTE/NEA capacities to design and implement a National Forest and Pastures Monitoring System that will provide the required information on forest condition, cover and dynamics while at the same time generating new relevant data on parameters such as forest carbon and biodiversity.

**Objective 2:** Improve capacity of MTE on GIS and remote sensing analysis for mapping; monitoring and improving estimations, in order to detect kind, type and amount of changes occurred in land cover and forest resources in a systematic and continues way. The years for the evaluation would be 1992, 2003 and 2015.

**Objective 3:** Propose the necessary organizational structure and technical capability to carry out and execute forest and pasture resources assessments and monitoring programs in Albania.

**Objective 4:** Strengthen MTE capacities on data processing and information dissemination and utilization for cross-sectoral policy coordination and decision making.

Following a National Inception Workshop in November 2016 an "inception report" of the project was prepared. It emphasized the roles of SLU/SFA in capacity building and facilitation and the role of Albanian side to implement the work. It also included a proposed work plan for the project, a suggested organization of staff at the National Environmental Agency (NEA) and its partners required to implement the ANFI and a broad assessment of information needs for the ANFI 2018.

The implementation commenced in February 2017 with a start-up workshop for parties involved. It was followed by planning and preparations by NEA (under SLU/SFA guidance) of a Pilot Survey including a set of training courses for the NEA core team and NAPA field staff. It also involved experts and facilitators from the Faculty of Forest Sciences, Tirana, and SLU/SFA.

The Pilot Survey was successfully completed during 2017 but some challenges for the project became apparent. The major ones were (1) the delay of the IT system development causing delays in project implementation, (2) the delivery of remote sensing data and (3) the sustainable staff

capacity development having roots in the organizational set-up and perception of ANFI as a recurrent but non-continuous activity.

During the first part of 2018 the work of the ANFICB Project accelerated towards the start of ANFI. At the First National Seminar in March 2018, the agreed design and methodology for ANFI 2018-19 was presented and a long-term strategy for the ANFI was elaborated and proposed. For the purpose of sustainably maintaining capacity and organization, the long-term strategy proposed re-inventory of the sample clusters on a five years cycle (20% annually) following the first inventory round during 2018-19. A Communication Strategy and Plan was also introduced and initiated by NEA. In April 2018 the IT system development could start and the agreed Open Foris data collection system, OF Collect, be introduced in time for the field work.

Through June–October 2018 some 543 sample clusters were inventoried by 6 trained field teams from NAPA while Quality Assessment was carried out by NEA on a subsample of 58 clusters. During a training workshop for NEA staff in November 2018 the quality of field data was analyzed and discussed and the processing of inventory results was introduced.

At the Second National Seminar in March 2019 the first preliminary results of ANFI 2018 were presented by NEA staff and discussed among the attending government stakeholders. The results were based on data from ANFI 2018 which represents a 60% subsample of the entire sample. Through May - August 2019 the remaining sample clusters were inventoried and added to the ANFI (Open Foris) data base, which work had been successfully completed by July 20, while all quality assessment data had been collected by August 10. The cleaning of the data base and its further processing and analysis is currently ongoing.

In June 2019 a review of ANFICB project by an ESP Mission concluded that although all required ANFI data has/will be collected by the NEA team and substantial capacity has been built, “there is uncertainty on the capacity within NEA on the analysis of the field data” (Annex 2). The Mission recommended an extension of the contract of the NFI consortium and the ANFICB project in order sustain its achievements and fill specified gaps.

Based upon the ESP recommendations a proposed project extension plan October 2019 - June 2020 was outlined, submitted by SLU/SFA to ESP and NEA (Annex 3). The proposal was discussed with the partners during a visit by an SLU team to Tirana in September 2019 and updated thereafter.

This 3-years report on the ANFI Capacity Building project summarizes the progress of the project during the first nine months of 2019 and the status and perspectives of the project in September 2019. It is prepared at the end of the original contract period. As an extension has been recommended by ESP, and a plan for an additional period has been elaborated and negotiated, the final project report will not be prepared at this stage but is scheduled for June 2020 in connection with the Third (Final) National Seminar.

## 2. Summary of project status and performances

- I. Following work by the NEA team to further analyze the first preliminary results generated during the previous training workshop in November 2018, a second capacity building workshop was held on March 11-14. It involved the NEA analysis team and the facilitators of SLU/SFA/Forest Faculty on March 11-14. At that time the entire process of pre-evaluation, data cleaning, application of volume-functions, preparations of data base for estimates, production of tables and analysis of results was reviewed. The results were to be the input presented at the National Seminar the following week.
- II. The Second National Seminar of the ANFI Project was successfully held on March 19, 2019. It was attended by the Minister of MTE, ministerial staff and higher representatives of NEA and the University. Besides a general review and discussion of the NFI system and its use, the major focus of the Seminar was the presentation of preliminary ANFI results (T700) by the NEA Team.
- III. In April 2019, after the 2<sup>nd</sup> National Seminar and as part of the Communication Strategy, the NEA Team visited the offices of 5 zonal regions for presenting and discussing the preliminary ANFI results.
- IV. The final year of data collection for ANFI 2018–2019 included field work during 6 May- 20 July 2019. The introductory training and all the field operations were undertaken by the NEA/NAPA teams using the same methods and procedures as previous year but this time independently without external facilitation other than the ANFI coordination group at NEA.
- V. The data collection for the quality assessment of 10 % of the field clusters was undertaken during 10 June – 10 August. The work on the quality assessment report is currently ongoing and expected to be presented and discussed at a workshop in November.
- VI. A review of the ANFICB project was undertaken by ESP in June 2019. It was generally positive about project status but concluded that some specific aspects remain to be addressed including improvement of data analysis system, review of allometric models to be used in ANFI and implementation of a workshop on LIDAR/remote sensing analysis/mapping. It also recommended that the hosting of the OF/ANFI data base at Luke should remain during extension period as a precaution until the server situation in Tirana has been fully settled.
- VII. The ESP mission concluded their review by recommending the project to elaborate a proposal for a project extension including the aspects mentioned above.
- VIII. An extension proposal addressing the comments by ESP and covering nine months was outlined by SLU/SFA. During an SLU mission to Tirana in September discussions were held with interested parties (NEA, ASIG, ESP and the Forest Faculty) and feedback was obtained to formulate the final extension proposal.
- IX. Following discussions with ASIG, a sample of LIDAR data needed for the proposed workshop could finally be released and a MoU between ASIG and the project be signed.
- X. As a result of the discussions in September it was also agreed that the ANFI Open Foris data base is now safely stored in Albania and that the further hosting of the data at LUKE is not needed and could be cancelled by September 30.

### **3. Planned work during the proposed extension**

Although the work planning is basically the task of the national Albanian partner the first proposed work plan for the project 2017-2019 was outlined and included in the inception report of the consortium, as the Albanian NFI team had not been finally identified at that stage. The first work plan was later updated and accepted by NEA while later updates of the work plan was prepared on an annual basis by NEA following meetings and workshops with the consortium and others concerned.

The proposed extension plan was framed by the ESP review mission. It has then been outlined to its current version by SLU/SFA with feed-back given by NEA. When this report written the proposed plan is awaiting final comments and decision by MTE. The plan (Oct 2019 – June 2020) has five main components which have been listed and commented herewith.

#### **3.1 Processing of inventory results of ANFI 2018/19**

The data collection for ANFI 2018-19 was successfully completed in August 2019. Before presenting a final report on the results the NEA team will need to process the data and analyze the quality of work and the results by using a similar way as they did for the preliminary results of ANFI 2018. By doing this in a systematic way and more independently than previous year, they will build their confidence and capacity. The SLU/SFA consultants will be available for backstopping in this period and in exercises during a concluding workshop.

#### **3.2 Strategy and Plan for use and further development of allometric models**

The set of allometric equations available for Albania, and used so far in ANFI, has a number of shortcomings regarding completeness and quality and there is uncertainty on what equations to be applied for various species. This activity has been subdivided in two parts. 1) Reviewing and analysing existing allometric models, discussing the outcome of the analysis and choosing the most appropriate models to be used in ANFI 2018-2019, 2) Developing a method and strategy for improving allometric models for Albania in the future. The work includes capacity building on statistical aspects within the ANFI team and also involves the Forest Faculty, who will be the lead cooperation partner in part 2.

#### **3.3 Data base analysis system based on Open Foris Postgres**

An improved system based on the Open Foris Postgres database should be developed in parallel with the processing of data using “the old method”, which is based on Excel software. The aim is that the ANFI results will finally be recalculated using the new system.

#### **3.4 Implementation of LIDAR/Remote sensing analysis and mapping workshop.**

The access to high resolution laser data (LIDAR) in combination with an NFI database provides unique opportunities to prepare maps for local use/decisions in integrated forest land management. Generating such maps requires specific preparations as regards computer hardware, software, data sets and staff able to develop their technical knowledge and capability in this field. To initiate this work in Albania a workshop has been proposed. Its purpose would be “to demonstrate and provide opportunities to exercise and discuss a methodology for analysis of data and preparation of forest maps in Albania.

### **3.5 Establishment of a sustainable Albanian National Forest Inventory and Monitoring system (workshop)**

The topic of the final capacity building workshop highlights the main objective of the ANFICB project. The workshop has dual objectives 1) To update and establish the final ANFI results to be officially presented through the use of the most recent version of the data base analysis system. 2) To highlight and discuss various aspects on the sustainability of the ANFI system, including its management and use as well as the communication of method and results. Such aspects are the use of results in policy, technical issues related to the re-inventory phase, potential needs for organizational adaptations and the communication of new results.

## **4. Challenges and risks**

The proposed nine months extension of the ANFICB allows an organized phasing out of the ANFICB project, filling of some important remaining gaps in system development and provides some much needed time for anchoring of the Albanian National Forest and Pastures Monitoring system, including the building of capacity and confidence among the ANFI team and its partners.

Some challenges were communicated in the two-year report concerning the time available for an orderly processing and analysis of ANFI results, for communication of results and for a balanced capacity building. Those challenges have been reduced through strict implementation of work plans by the NEA team and the addition of the proposed extension phase.

Specific bottlenecks reported throughout the project (shortage of IT/GIS expert at NEA and access to LIDAR and Remote Sensing data) still remain (although there has been some promising discussions on collaboration with ASIG over the latest months). As a consequence the expected ambitions and outputs concerning mapping and change analyses have been modified in the proposed updated version of the agreement for the extension phase.

The development and introduction of a proper data base analysis system has also been delayed as a result of the shortage of IT/GIS experts connected to the ANF, who could adopt required technology and coordinate the capacity building in this field. A new IT expert is being recruited to strengthen the ANFI team. Provided that he/she will be available in time for the project there seems to be a way to address this very critical issue in ANFI.

In the long run the continuous access to trained expert staff in the most critical technical fields appear as the main threat to the sustainability of the National Forest and Pastures Monitoring system in Albania and there will a need for further developing the system and adapting it to the re-inventory and monitoring phase soon after the results have been presented in 2020. Keeping such staff on a continuous basis is a challenge in any country but providing the conditions for doing so would be a key. Cooperation with partner organizations and academia (such as the ongoing cooperation with the forest faculty) for sustaining the ANFI system and providing staff and expertise, would be another way to broadening its competence base.