

Integrated Approach to Forest Management in Turkey

by Bahtiyar KURT

The General Directorate of Forestry of Turkey and UNDP have been working together for the sustainable management of forests in Turkey for many years.

Under this partnership, both organizations decided to design a project to remove the gaps in sustainable forest management in Turkey through developing new approaches and tools in biodiversity conservation, climate change mitigation and other related issues.

Traditional Forest Management in Turkey

Almost all of Turkey's forests (almost 99%) belong to the state. The General Directorate of Forestry (GDF) is the institution responsible for the management of forests in Turkey. GDF's fundamental mission is to protect forest resources against any threats and danger, to enhance forest resources in a nature-friendly manner and to achieve sustainable forest management at a level that will provide far-reaching sustainable benefits for society in ecosystem integrity. In seeking to fulfill this mission, GDF works at central and local levels. At central level, GDF has 21 Departments. At this level, GDF's Forest Management and Planning Department is directly responsible for preparation of management plans. At local level, GDF includes 27 Regional Directorates, each of which is further sub-divided into five or more Forest Enterprise Directorates (FEDs); altogether, there are 249 FEDs in Turkey. A final hierarchical level is that of Forest Enterprise Sub-Directorates, where 10-year forest management plans developed at FED level are implemented.



Figure 1:

The 5 pilot sites across the Mediterranean Region of Turkey.

Until recent years, the main and often sole purpose of forest management in Turkey was timber production. However, the last 10 -20 years have seen the beginnings of a paradigm shift in forest management. There have been important developments concerning the integration into forest management of sustainable forest management criteria. Services other than timber production have started to be considered under the concept of ‘functional forest management planning’. This process was initiated after the 1993 Ministerial Conference for the Protection of Forests in Europe in Helsinki (also known as the “Pan-European Forest Process”). In a related development, GDF began work on the development of ‘Sustainable Forest Management Criteria’ in 1999.

Following the integration of sustainable forest management criteria into forest management, the forest management planning approach has also changed and services other than timber production were integrated into the forest management planning process.

Although GDF has adopted a policy towards forest management planning that permits the integration of services other than timber production, e.g. biodiversity and climate change mitigation/adaptation, expertise or lack of know-how was a limiting factor for full implementation of this aspects. Both institutional capacity and the legal framework needed to be improved if planning efforts were to make functional management truly effective.

Based on this gap analysis and the needs of GDF in the light of these goals, GDF and UNDP have come together to design a project. “The Integrated approach to management of forests in Turkey, with demonstra-

tion in high conservation-value forests in the Project for the integrated Mediterranean region was prepared and granted by the Global Environmental Fund (GEF).

Project Approach and Expected Changes

The project was initiated in 2013 and terminated at the end of 2019. The total grant allocated to the project was 7,220,000 USD, and along with the national co-finance, reached a total budget of more than 28 million USD.

The main goal of the project was to promote an integrated approach to management of forests in Turkey, demonstrating multiple environmental benefits in high-value forests. In order to achieve this, the project defined three components:

- Component 1: Policy and institutional framework for integrated forest management within landscape;
- Component 2: Implementation of forest-based GHG mitigation and carbon sequestration tools within landscape;
- Component 3: Strengthening protection of high conservation-value forests in Mediterranean landscape.

Finally, the project has identified 5 pilot sites in 5 regional directorates of GDF in Turkey’s Mediterranean region.

Results Achieved

As of May 2019, the project had already finalized most of its activities. Below, some key outcomes and outputs are listed.

Integrated approach to forest planning

One of the key expected outcomes of the project was to design, test and implement an approach on delivering integrated forest management plans. The new approach was based on having biodiversity, ecosystem services maps, fire risk, pest risk, carbon focused silviculture, NWFP’s, eco-tourism and industrial plantation perspectives, differing from the “business-as-usual” plans. As part of the project activities, 28 forest management plans in 5 pilot sites were prepared

covering an area of 638,923 ha. In order to strengthen the implementation of these new management plans, training was conducted for forest chiefs on the implementation of integrated forest management plans. Moreover, training for forest planning engineers at GDF and in the private sector on the principles of making integrated forest management plans was also provided.

Biodiversity Integration Tool

Another key project outcome was the development of a tool to integrate biodiversity conservation priorities into the forest management plans. This was achieved through: i) definition of the biodiversity mainstreaming methodology, ii) first implementation in the Gülnar pilot site, iii) extension of the methodology to other pilot areas, iv) preparation of recipes for threatened species, targeting the forest chiefs through annexes to the forest management plans, and v) ensuring the successful implementation through extension activities targeting the forest chiefs and managers. Under this scheme, a total area of 130,346 ha was identified as biodiversity concern areas under 5 pilot sites. The no-touch zones that were prepared under this tool were grouped into Zone 1 and limited activity areas were called Zone 2. Under Zone 2, only certain forestry actions are allowed during specific seasons. The details of those actions and species-specific recipes are given as part of forest management plans. The total areas covered under both zones is around 64,000 ha. Two guidelines were prepared for the implementation of biodiversity actions in the forests. While the first one is called Practitioner's Guide and targets forest implementers, the second one is on how to prepare management plans with an integrated approach.

Measurement, Reporting and Verification System for forestry sector

Sustainable Development Goals - Forestry Mapping

The project has led in developing a sector-specific Measurement, Reporting and Verification (MRV) Report to support GDF in carbon-related reporting processes. The report was prepared by the Gold Standards and Trees Foundation. The MRV document set the baseline for high-quality reporting,

including data collection and storage processes. New approaches resulting from the MRV document were tested as part of the inventory process. According to the MRV findings, methodology was developed to collect data on litter and deadwood which were overlooked previously. The MRV report is available both in Turkish and English.

Additionally, the Project team has decided to undertake a study on mapping linkages between the Turkish Forestry Sector impact area and the Sustainable Development Goals. A working group has been established to undertake the task, with members from UNDP, key experts and NGOs in Turkey. The working group identified key relations between the forestry sector and Sustainable Development Goals (SDGs), and prepared a large set of indicators following the path described by the MRV report. The draft outcome document, prepared as a discussion paper, was circulated to the relevant parties during this reporting period to collect the feedback from the relevant parties. The paper also describes the linkages between SFM C/I that were revised during 2018. Following the finalization of the report, the English version will also be ready to be disseminated among the international community. As a conclusion, the report will be finalized with comments from the stakeholders before the end of 2019.

National Sustainable Forest Management criteria/indicators set revision

The GDF has decided to revise the Turkish Sustainable Forest Management (SFM) Criteria/Indicator set along with the updated European SFM set. The Project team has decided to support these efforts as this work overlaps with the Project goals and priorities. Six working groups were established and more than 15 working group meetings were organized to work on six different criteria, with the participation of more than 150 participants throughout the country. The SFM C/I set was finalized at a national level and a supporting document "The National Guide on Revised SFM C/I" was also prepared.

Eco-tourism plans and NWFPs

Another new approach as part of the integrated approach to forest management was

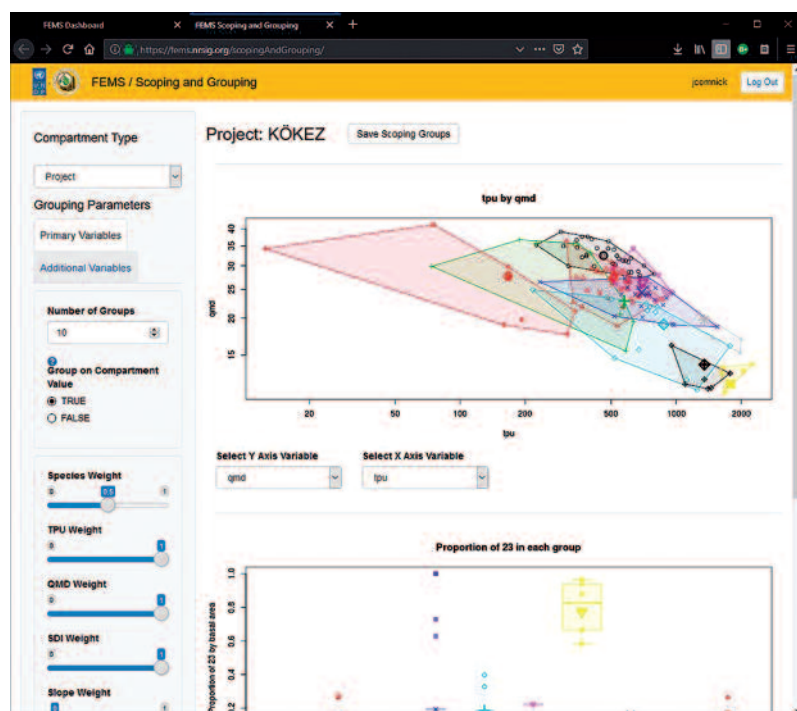
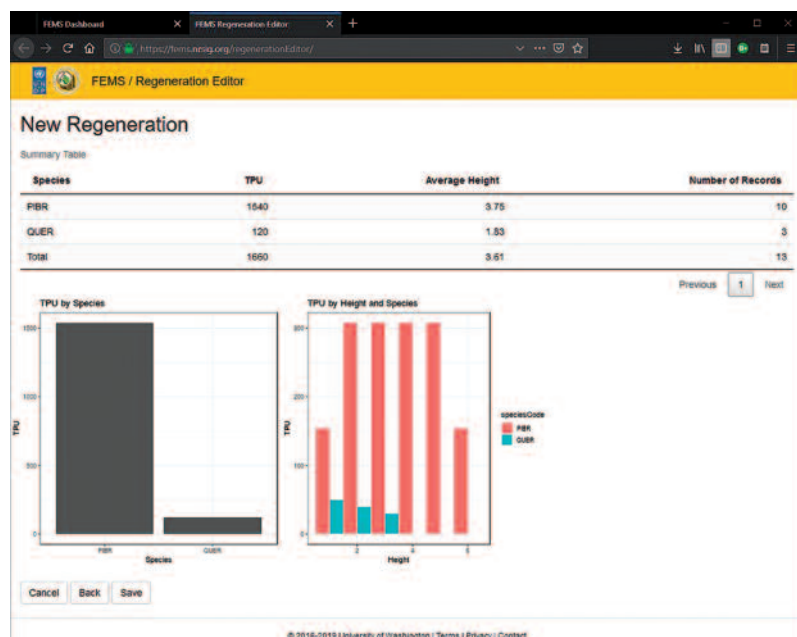


Figure 2:

A snapshot from the decision support system.

the inclusion of eco-tourism and non-wood forest product (NWFP) priorities to the management planning process. In order to achieve this, the natural values and priorities of the pilot sites were identified through detailed surveys and the findings were integrated into the forest management plans. In terms of eco-tourism, two ecotourism plans were prepared for the Koycegiz and Pos pilot sites. The actions identified were integrated into the plans and the project is contributing to the implementation of one of the plans through selected activities at the Koycegiz pilot site.

A similar approach was adopted for NWFPs and 3 value-chain surveys were undertaken targeting daphne, thyme and carob. All documents are available in English. Similar to the eco-tourism approach, the project has identified the Daphne (Laurel) as the key demonstration project at the Andirin pilot site and specific activities will be implemented before the end of the project.

Decision Support System (simulation and optimization)

A decision support system was designed and put into operation by the project as of 2019. The system, called Forest Management System ("Orman Yönetim Sistemi" in Turkish), is currently online. The software was prepared in collaboration with Yale University and the University of Washington. The program has two parts: the first is a forest simulator that grows the forest on the basis of the inventory and silvicultural activities throughout a management calendar. The second part focuses on optimization of the activities based on the management priorities set by the forest managers. The program will help Turkish foresters to design their forest management plans according to the findings and suggestions of the program. The system was designed using an open source approach and will be available for other countries and organizations.

Forest inventory with satellite images

Another Project activity was to test modern, cheap and fast inventory methods for future use in Turkey. To this end, the Project has worked with Silvia Terra, a company specializing in forest inventories with the support of satellite images through their own cruise boost. This approach has been proven to decrease the cost associated with the inventories. The trial work was undertaken in the Alara Forest region and Silvia Terra successfully produced heat maps that present stock in selected areas. A second phase of the action was carried out in another forest, Kökez, which has more species and a more complex forest structure. Both studies were conducted successfully, indicating that it is possible to produce quality inventories with the help of satellite imagery and with a

reduced amount of field data. GDF will assess the findings of the study and take the necessary steps to revise its inventory-making.

Approaches to climate change mitigation

Another key Project activity was focused on creating GHG mitigation benefits through several approaches. The results of these are given below.

Fire management system

Under the Project, several activities were carried out to prevent and stop forest fires. A meteorological early warning system and a forest fire early warning system were established and made operational at national scale and were integrated into the Forest Information System of the GDF. Fire Management Plans for 5 pilot sites were prepared and integrated into 28 forest management plans. Several capacity-building activities were designed for GDF staff and they were integrated into GDF's online training system. Training modules at the International Training Center at Antalya used to run as off-line systems; they are now integrated into an online training system. The Forest Fire Simulator, a sound software for the training of firefighters, was developed for the Antalya International Training Center by the HAVELSAN company, with the funding from the Project. In regard to fire prevention, training sessions in the villages of the pilot forests were implemented. Training activities targeted primary school students and villagers, separately.

Pest management system

Pest risk areas were assessed and mapped based on records of pests in the last decade in 5 pilot project sites. Prescriptions based on the pest damage maps and assessment were prepared and integrated into forest management plans in order to minimize the pest harms and to conduct more effective control activities. A methodology and a system for carbon calculations born from the pest disturbance were developed by the Project. The system is fully in line with the latest scientific studies and updated scientific developments. A study on the technical specifications and the needs for an early warning system was conducted. A report summarizing best practices on the use of

early warning systems around the world, along with key findings, was prepared and submitted to GDF. Finally, two labs were established and fully equipped by the project on pest management, specializing in identification of pest species and the use of predators.

Carbon oriented silviculture activities

The Project identified 41 pilot sites for silvicultural implementations. Several activities were tested on those sites and carbon measurements are under way. These calculations and the sampling will continue after the Project to see which activities end up with the highest GHG mitigations. Moreover, some of those methods are widely used in project pilot areas. The area covered by carbon-focused silvicultural activities covered 9,339 ha. Such activities have included regeneration thinning, artificial regeneration tending, initial thinning, conversion of coppices into high forests, industrial plantation and rehabilitation.

Sustainability and Next Steps

Some of the key activities, findings and results of the Project are listed above. This article indicates that such targeted projects can deliver a lot in terms of testing new approaches and increasing the capacity and improving the legislative and policy environments. Most of the Project documents presenting the knowledge produced by the project are available in English as well. They can be accessed from UNDP Turkey's internet page, under the "Climate change and environment" portfolio's publications.

The project will be finalized at the end of 2019. In order to ensure the sustainability of project outcomes and of the methodologies/tools produced, a Sustainability Working Group has been established by decision of the General Director of GDF. The Working Group will list the main issues to be addressed by GDF and follow up implementation post-Project as well.

Bahtiyar KURT
Natural Resources and
Biodiversity Cluster
Lead
United Nations
Development
Programme

Yıldız Kule, Yukarı
Dikmen Mahallesi,
Turan Günes Bulvarı
No:106, 06550,
Çankaya, Ankara
Turkey

K.B.

bahtiyar.kurt@
undp.org

Summary

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Résumé

Approche intégrée de la gestion forestière en Turquie

La Direction générale des forêts (DGF) et le PNUD travaillent ensemble depuis de nombreuses années pour la gestion durable des forêts en Turquie. Dans le cadre de ce partenariat, les deux organisations ont décidé de concevoir un projet visant à combler les lacunes dans la gestion durable des forêts en Turquie en élaborant de nouvelles approches et de nouveaux outils pour la conservation de la biodiversité, l'atténuation des effets du changement climatique et d'autres sujets connexes. Cette initiative globale a été appelée approche intégrée de la gestion des forêts. Le projet a été soutenu dès sa conception par le Global Environmental Fund (GEF – en français : Fonds mondial pour l'environnement), et mis en œuvre en 2013. Depuis 2019, le projet en est à sa phase finale et la plupart des résultats ont été atteints. Cette publication présente les principaux résultats et les possibilités de réplique du projet ainsi que de partage des connaissances entre les pays méditerranéens.