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TURKEY

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General Information about the Republic of Turkey

Republic of Turkey

- **Capital: Ankara**
- **Population** 79.5 million
- **Area** 779,452 sq km (300,948 sq miles)
- **Major languages** Turkish (official),
- **Major religion** Islam
- **Life expectancy** 72 years (men), 79 (women)
- **Currency** Turkish lira



The characteristic distribution rates of Turkey is as follows; 36% agriculture, 29.8% forest, 27.6% pasture and grassland, and 6.6% other areas

UN, World Bank: https://www.bbc.com/news/world-europe-17988453

Policy

- Analyze forest and climate change policy
- Analyze forest and climate change legislation
- Analyze strategic documents (national forest programmes, forest management plans, forest inventory, etc.)
- Analyze national reports submitted to UN Agencies and Conventions

Forest and Climate Change Legislation

- The Forest Law, No 6831, which entered into force in 1956, determines the definition of forests, the areas excluded from the boundaries of forests, classification of forests from the different land categories, state forests and forest cadaster, economic development and transfer of forest villagers, preservation of forests, grazing land, and pasture affairs, protected forests, national parks, production and sale places, forestation and building affairs, extinguishing forest fines, the power of forest officials regarding carrying.

Forest and Climate Change Policy in Turkey

- Turkey's overall climate change policy is framed with several cross-cutting and sectoral policies, strategies, and action plans that are based on the national legislation in relevant sectors.
- In this scope, the Government of Turkey, the Ministry of Environment and Urbanization, and OGM play a key role in the development of climate change and forest-related policies for the forestry sector, applying comprehensive measures, initiatives, and policies including land improvement, support, and development of rural infrastructure, development of forest villagers and improvement of forest management.

Forest and Climate Change Policy in Turkey

- The main policy documents dedicated to climate change are the National Forestry Program (2004-2023), National Biodiversity Strategy and Action Plan (2007), National Climate Change Strategy (2010-2023), the National Climate Change Action Plan (2011-2023), and Turkey's National Climate Change Adaptation Strategy and Action Plan (2011-2023), National Watershed Management Strategy (2014-2023), National Strategy and Action Plan to Combat Desertification (2015-2023), The Presidential Program for 2021.

Forest and Climate Change Policy in Turkey

- Morever, OGM established a LULUCF working group in 2008 to work on climate change mitigation and adaptation issues.
- The working group prepares the forestry section of the strategic documents, such as the National Climate Change Strategy (2010-2023), National Climate Change Adaptation Strategy and Action Plan (2011-2023), and 11th Development Plan (2019-2023).
- Moreover, the LULUCF working group prepares national GHG inventory reports for forests and attends climate change meetings and conferences.

Forest and Climate Change Policy in Turkey

The forest policy and policy documents, Turkey's 11th Development Plan targets various strategies that could support forest-related climate change mitigation and adaptation activities.

These strategies are:

- Access to international climate finance,
- Establish gardens in cities to support climate change adaptation,
- Capacity development in climate change adaptation,
- Implement forestry activities under INDC,
- Develop natural disaster risk maps based on climate scenarios.

residential program.

The Presidential Program for 2021

- “The Presidential Annual Program for 2021” was approved by the President and started to be implemented. The targets regarding climate change in the Presidential 2021 Program and the measures to be taken to achieve these targets are listed below:
- Disaster hazard and risk maps will be prepared by taking into account the scenarios regarding the effects of climate change throughout the country.
- Climate change will be combated in sectors that cause greenhouse gas emissions. By increasing the capacity for adaptation to climate change, the resilience of the economy and society to climate risks will be increased.

The Presidential Program for 2021

- Within the scope of the green city vision, ‘National Gardens’ will be built in our cities and the amount of green areas will be increased in order to increase the quality of life and adapt to climate change.
- Our cities will be planned on the basis of disaster risk, climate change, geographical features and historical values.

Turkish National Forestry Program (2004–2023)

- In the Turkish National Forestry Program, which was prepared for a period of 20 years including the years 2004-2023, the main purpose is;
- “It is the sustainable management of forest resources and the optimum contribution to the welfare of the society and the sustainable development of the country.”

Turkish National Forestry Program (2004–2023)

There are 4 main purposes:

1- Protection of forests, forest areas, biodiversity and natural structures against biotic and abiotic damages,

2- Developing existing forests,

3- Expansion of forest areas with forest establishment on areas outside the forest areas,

4- Providing sustainable ecological, economic, social and cultural benefits from forests at local, national and global levels and benefiting them for the benefit of society.

National Reports Submitted to UN Agencies and Conventions

- Turkey, as an Annex I Party to the UNFCCC1, considers expedient the compliance of both mitigation and adaptation commitments and national contributions with existing national circumstances, in alignment with the fundamental principles of the Convention, the principle of Common but Differentiated Responsibilities and Respective Capabilities of the Countries (CBDR-RC), which envisages a leading role of developed countries in the response to climate change, as well as the provision of technical, technological and financial assistance to developing countries.

National Reports Submitted to UN Agencies and Conventions

- Turkey signed the PA on 22 April 2016 to take a role in global climate efforts and provide its contribution through implementation of climate actions. But the PA has not been ratified yet.
- Turkey is committed to combat climate change and its adverse effect in key economic sectors.
- In its National Climate Change Strategy and Action Plan and National Climate Change Adaptation Strategy and Action Plan, Turkey has committed to implement mitigation and adaptation measures and activities in the forestry sector as its contribution to the global climate change efforts and achieve sustainable forest management.

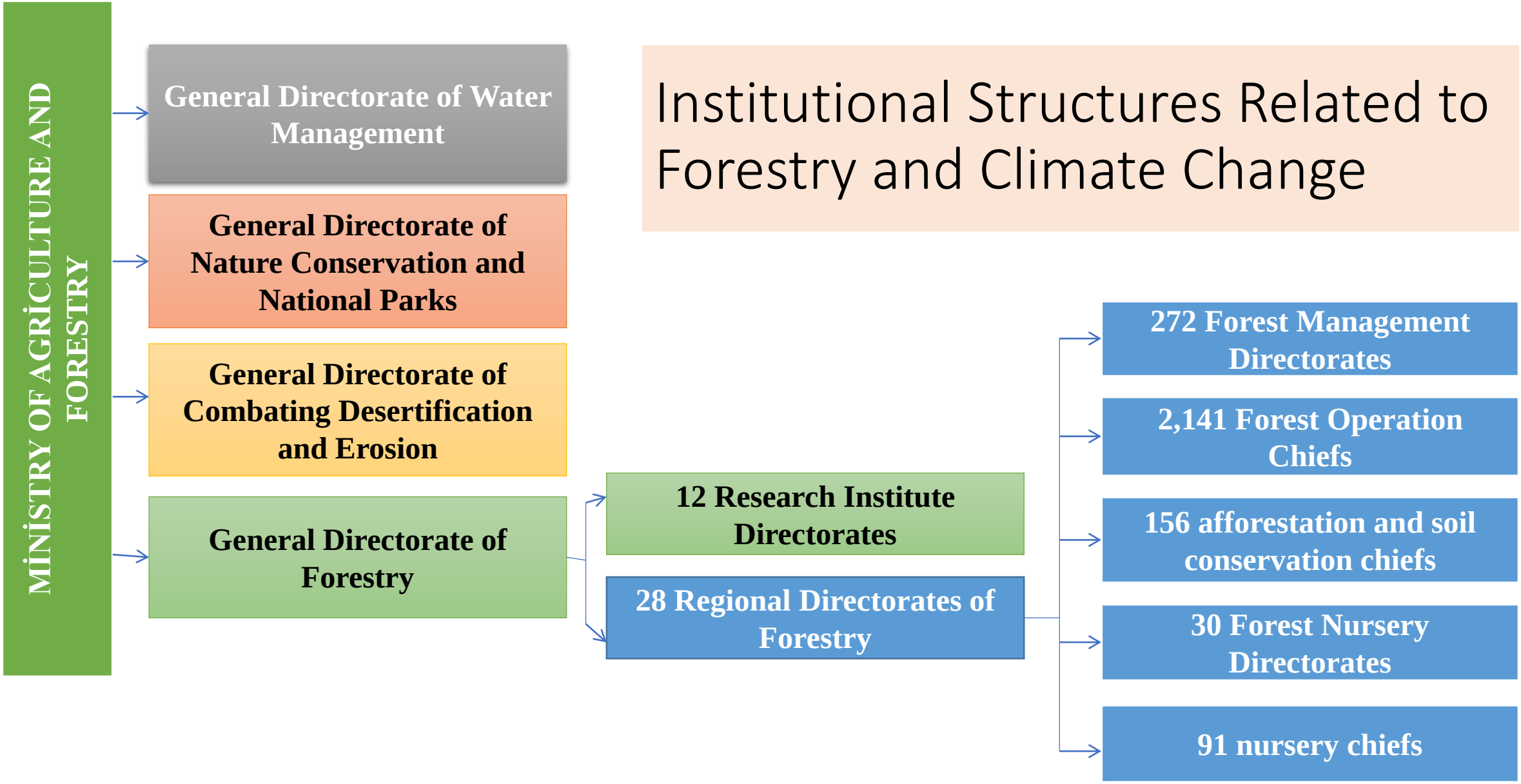
National Reports Submitted to UN Agencies and Conventions

- Turkey has submitted seven National Communications (NC) with GHG inventories and four Biennial Reports (BR), and one INDC to the UNFCCC.
- In addition to national technical and financial efforts to implement mitigation actions and adaptation measures, Turkey has also developed and implemented many projects with the support of United Nations (UN) agencies, regional and local organizations, other bilateral and multilateral partners, as well as the institutions that comprise the financial mechanism of the Convention.

National Reports Submitted to UN Agencies and Conventions

- Moreover, the 3rd Agriculture and Forest Council were gathered in 2019.
- The Council developed one activity that directly supports climate change actions in OGM.
- This activity is to use meteorological data efficiently in forestry because of increased importance under climate change, increase research activities, and develop activities to monitor climate change impacts and develop action plans to prevent the potential effects of climate change.

Institutional Structures Related to Forestry and Climate Change



Institutional Structures Related To Forestry And Climate Change

- OGM is the main body in the sector and has been established as a corporate body responsible for almost all sustainable forest management activities.
- As of the end of 2020, it has a large and nationwide organizational structure with 38,184 employees.

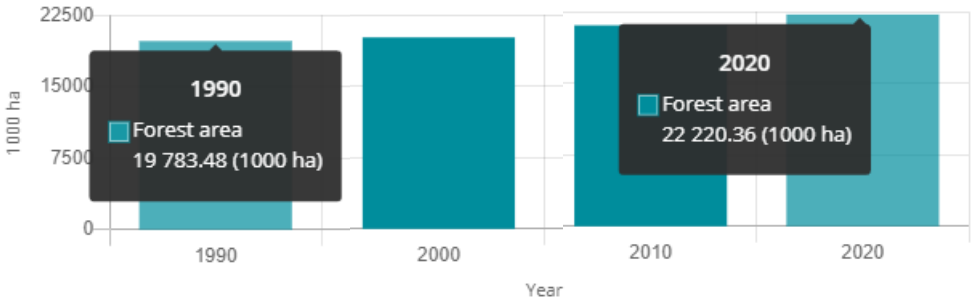


38,184 employees.

State of Forests and GHG Inventory 1990-2020

Turkey

Forest Area (1990 — 2020)



Forest growing stock and carbon (1990 — 2020)

CSV

	1990	2000	2010	2020
Growing stock (million m³ over bark)	873.37	1167.22	1380.14	1697.06
Carbon stock in biomass (tonnes/ha)	21.73	23.63	28.14	32.12
Total carbon stock (tonnes/ha)	71.29	75.95	80.71	87.98

Forest area % of land area (2020)



Primary forest % of forest area (2020)



Climate projections and scenarios in CA

- INDC of Turkey was submitted in 2015
- 18% to 21% reduction (246 million tonnes CO2 eq.) in GHG emissions by 2030 compared to Business as Usual (BAU) Scenario (21%) was predicted in this document.
- 29.5 million tonnes CO2 eq. of this mitigation target resulted from Forestry sector activities (including HWP).
- The assumptions of the forestry sector in this document:
  - To increase the forest area 28 % to 30 % of total surface area of Turkey until 2023
  - To increase average growing stock per hectare by rehabilitation and restoratin programs

Observed Changes in Forests since 1990

- Impacts of climate change on forests
- Changes in forest management and provision of forest goods and ecosystem services
- Changes introduced by new forest policies to tackle climate change
- SFM Criteria & Indicators

Observed Changes in Forests since 1990

Observed impacts of climate change on forests in Turkey and the Mediterranean Region are presented below.

- Destruction in some riparian, alluvial, slope, and degraded forests due to more frequent extreme weather events such as storms, floods, etc. According to the records of the General Directorate of Forestry, approximately a 9.7 million m3 tree stock in 1 million ha has been damaged by snow, wind, landslide, overflow, and drought between 2009 and 2013 (OGM, 2014).
- Decreased forest productivity, increased drought stress and disease, and insect damage due to water scarcity and drought in forests. According to the defoliation ratio observations that are done in the scope of the Forest Ecosystems Monitoring Program, the highest defoliation ration is observed in 2008, in which the decrease of precipitation is at the peak.
- Increased forest productivity due to longer growing seasons in some sub-regions where no water stress exists.
- Increased frequency and amount of natural disturbances such as forest fires, pathogens by temperature increase and change of precipitation regime. 291,176 m3 fir (Abies cilicica) tree stock has been dried between 2000 and 2010 by increasing the bark beetle population, which was triggered by climate change (Kantarcı and Avcı, 2013). Moreover, the average numbers of forest fires between 1990 and 2019 have been increased in Turkey (OGM, 2019). The forest fire season was also extended by climate change in Turkey.
- Recent evidence about growth declines and species die-back stresses the importance of extreme events for triggering drastic impacts on tree growth and survival by the Adapting Mediterranean Forests to Climate Change in the Konya Region Project (2017).

Anticipated effects of climate change on forests

Anticipated effects of climate change on forests in Turkey and the Mediterranean Region are presented below. Changes in species distribution were predicted for the years 2020, 2050, 2080 (OGM, 2011).

- Altitudinal and latitudinal shifts in tree species distributions were predicted for the years 2020, 2050, and 2080 (OGM, 2011).
- Destruction in some riparian, alluvial, slope, and degraded forests due to more frequent extreme weather events such as storms, floods are expected to increase more.
- Loss of forest biodiversity in forests is expected through climate change.
- Climate change will likely alter more the frequency and intensity of forest disturbances, including wildfires, storms, insect outbreaks, and the occurrence of invasive species. These disturbances can reduce forest productivity and change the distribution of tree species.
- Increased length and severity of summer droughts will affect forests negatively. Drought can weaken trees and make a forest more vulnerable to wildfire or insect outbreaks. Similarly, a wildfire can make a forest more vulnerable to pests.
- Climate change will likely worsen the problems already faced by forests from deforestation and degradation and air pollution.
- Climate change may be compromised some of the valuable goods and services provided by forests.

1990'dan Beri Ormanlarda Gözlenen Değişiklikler

- **SOY Kriterleri ve Göstergeleri**
- Sürecinin Başlatılması-1990
- Ormancılık Stratejisi-2000
- TUOP (2004-2023)-FAO desteği
- OGM SOY K&G Seti-2003 (ilk set 6 kriter 28 gösterge diğer paydaş katkısı alınamamıştır.)
- SOY K&G Raporu (2006 ve 2008)
- Kapasite Geliştirme Çalışmaları (2011-2017)
- Ülke Seti Geliştirme Süreci-2017

1990'dan Beri Ormanlarda Gözlenen Değişiklikler

- Hazırlık Programı -2017
- Çalışma Grupları-Taslak Set-Ulusal Çalıştay-2018
- SOY K&G Ulusal Seti-2018
- SOY K&G Uygulama Kılavuzu-2019*
- SOY K&G Türkiye Raporu 2019-2020*

* https://www.ogm.gov.tr/tr/e-kutuphane/kitaplik/surdurulebilir-orman-yonetimi

Sustainable Forest Management and CC Actions

- Implementation of SFM practices
- Ongoing and planned measures, actions, projects, etc.
- Success stories, best practice examples…

Sürdürülebilir Orman Yönetimi ve İklim Değişikliği Eylemleri

- Türkiye SOY K&G 2019 raporu hazırlanmış ve raporda son 12 yıllık (2008-2019) dönemde orman ve orman kaynakları ile yönetimi konusundaki gelişmelere ve değerlendirmelere yer verilmiştir.
- Ayrıca, söz konusu gelişmeler 2008 yılı raporu sonuçlarına göre kıyaslanmış SOY K&G uygulama kılavuzu esasları doğrultusunda 6 kriter 40 nicel 11 Nitel gösterge üzerinden raporlama yapılmıştır.
- Her bir kriter ayrı ayrı detaylı değerlendirilirken raporda gösterge bazında bir de hızlı değerlendirme tablosu oluşturulmuştur.
- Tüm süreç katılımcı bir yaklaşımla yönetilmiş ve koordine edilmiştir.
- Rapor, uluslararası ormancılık sürecindeki gelişmeler ve ülke şartları ölçeğinde özgün bir içeriğe sahiptir.

Sürdürülebilir Orman Yönetimi ve İklim Değişikliği Eylemleri

- Sürecin etkin yönetimi ve devamlılığı bakımından bir mekanizma da belirlenmiştir.
- Söz konusu rapor ulusal nitelikte olup, 2021 ve sonrasında uygulama birimi düzeyinde set geliştirme çalışmalarına GEF 7 kapsamında başlanmış 2022 ve sonrasında ulusal set çerçevesinde uygulama birimi setlerininde geliştirilmesi hedeflenmektedir.
- Üç yılık kesintisiz çalışma ve uzun yıllar birikimi eklenerek hazırlanan rapor her açıdan yol gösterici mahiyeti ile iyi uygulama örnekleri arasında sıralamak mümkündür.
- Ayrıca, Orman Politika Notu*-2017 (Dünya Bankası)

OGM Stratejik Planı 2019-2023**https://www.ogm.gov.tr/tr/stratejik-plan

- Yıllık İdare Faaliyet Raporları

*http://documents.worldbank.org/curated/en/694751507885204989/Turkey-Forest-policy-note

Sürdürülebilir Orman Yönetimi ve İklim Değişikliği Eylemleri

- ORBİS Projesi
- ICP Forest Programı uygulamaları,
- Ekosistem Tabanlı Entegre Orman Amenajman Planları
- Hazırlanan ve uygulamaya konulan ormancılıkla ilgili strateji belgeleri
- Orman sertifikasyon çalışmaları
- SOY ile ilişkili politika araçları açısından iyi uygulamalara örnek verilebilir.
- Bunların dışında Entegre havza rehabilitasyon projeleri uygulamaları da yine SOY kapsamında iyi uygulama örnekleri arasında yer alacak nitelikte projelerdir.

Sustainable Forest Management and CC Actions

The main vision of OGM is to conserve, increase and manage forest areas through sustainable management criteria and indicators based on the forest functions in order to ensure sustainable production of economic, social, environmental, and cultural benefits by also considering the global commitments and national demands.

Forests in Turkey remove 84.8 Mt of CO2e from the atmosphere, and with the harvested wood products, GHG removals reach 94.7 Mt of CO2e, which means that the removed carbon dioxide from the atmosphere has been effectively increased since 1990. The main reasons for the increase of GHG removals are afforestation/reforestation activities, sustainable forest management practices and rehabilitation activities, effective combat against forest fires and forest pests. (NIR, 2020).

The Strategic Plan of OGM does not directly refer to any climate change adaptation actions. However, climate change adaptation activities are implemented by OGM through sustainable forest management.

OGM has a forest research institute responsible for the development of qualified seeds and seed improvement. The activities on seed improvement of this institute consider climate change adaptation, sustainable forest management, and the produced seeds become resilient to drought and new climate conditions.

Developing forest general management capacity for sustainable forest management applications in the context of the water usage of the forests (2012-2013): It is aimed to check the present policies and strategies for sustainable forest management by bringing a deeper understanding to the potential results of climate changes including desertification and loss of biological diversity on forest and water interactions and integrating water function to forest management plans to adapt to climate change and contribute to reducing it. The project was provided capacity building on integrating water function to forest management plans.

Maximize the production of goods and services of Mediterranean forest ecosystems in the context of global changes (2013-2018): The project aimed to promote sustainable management of forest ecosystems by optimizing the production of goods and services Mediterranean forest ecosystems in the context of climate change in six countries in North Africa and the Near East which represent a forest cover of nearly 19 million hectares.

Adapting the framework for forestry policy to meet the needs of climate change in the MENA region (2010-2015): The objective of the Project is improving the political frame conditions for the sustainable management of forest ecosystems in order to preserve forest related environmental services in the context of climate change in countries of the MENA region (Algeria, Lebanon, Morocco, Syria, Tunisia, Turkey).

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Challenges, gaps and barriers for SFM

- Kırsal yoksulluk-Göç, Hızlı kentleşme-Nüfus artışı-Yaşlanma
- Uluslararası sözleşmeler kaynaklı taahhütlere uyum yetersizliği
- İklim Değişikliği (sel, heyelan ve taşkınlar)
- Hava, toprak ve su kirliliği
- Kuraklık (tarımsal ve mevsimsel), Gıda güvenliği
- Artan ve sıklaşan orman yangınları
- Orman hastalık ve zararlılarındaki artış
- Biyolojik çeşitlilik kaybı
- Arazi bozulumu,
- Ormanlardan beklenen talep ve beklentilerdeki çeşitlilik

Challenges, gaps and barriers for SFM

- Sosyo-kültürel ve sosyo-ekonomik yaklaşımlardaki farklılıklar
- Ar-Ge kapsamında yetersizlikler
- Küresel, bölgesel ve/veya ulusal istikrasızlıklar (savaşlar, terör v.b.)
- Finansal yetersizlikler
- Bütüncül ve bütünsel yaklaşımlara dayalı geliştirilmiş izleme, değerlendirme ve raporlama sistemlerindeki yetersizlikler
- Politik karar vericilerin öncelikleri ile SOY öncelikleri arasındaki farklılıklar
- Merkezi yönetim ile yerel yönetimler arasındaki öncelik farklılıkları
- Mülkiyet sorunları
- Orman alanlarından verilen yasal izinler

Challenges, gaps and barriers for SFM

- Kurumlar arası eş güdüm, koordinasyon ve işbirliklerine yaşanan aksaklıklar
- Yetki, görev ve sorumluluk çakışmaları
- Son yıllardaki ahşap ürünlerine olan talepteki aşırı yükselişe bağlı üretim baskıları
- Odun dışı ürün ve hizmetlere aşırı yönelim (mesire yerleri, şehir ormanları gibi yerlerin aşırı kullanımı kapasite ihlaline dayalı bozulmalar, odun dışı ürünlerden düzensiz faydalanmalar)

Enabling environment and options for improved SFM

- Legislative (policy and strategy development)
- Administrative
- Institutional
- Financial
- Technical (improved capacity)
- Technological…

İyileştirilmiş SFM için ortam ve seçenekleri etkinleştirme

- Ormanlar anayasal güvenceye sahiptir.
- Ulusal orman envanteri çalışmaları sonuçlandırılmalıdır.
- Orman Kadastro çalışmaları tamamlanmalıdır.
- Kırsal yoksulluğun giderilmesine daha fazla kaynak ayrılmalıdır.
- SOY K&G kapsamında paydaşlara yönelik farkındalık oluşturma çalışmaları daha da yoğunlaştırılmalıdır.
- Kurumlar arası eşgüdüm ve işbirliği imkanları geliştirilmeli iyi uygulama örnekleri toplumun farklı kesimlerine farklı içerikte olacak şekilde aktarılmalıdır.
- Kurumsal hafızanın muhafazası açısından yapısal değişiklikler zorunluluk dışında yapılmamalıdır.

İyileştirilmiş SFM için ortam ve seçenekleri etkinleştirme

- Ormancılık finansmanına yönelik yeni yaklaşımlar uygulamaya konulmalıdır. (PES, karbon ticareti v.b. İmkanları)
- Orman sertifikasyon çalışmaları daha da yaygınlaştırılmalıdır.
- İhtiyaç analizine dayalı maliyet etkin yatırımlar artırılmalıdır.
- ORBİS iyileştirme çalışmaları sonuçlandırılmalıdır.
- Özel sektörün ormancılık sektörüne yatırım yapmasına yönelik teşvikler çeşitlendirilmelidir.
- Orköy destekleri artırılmalı ve daha etkin kullanılmalıdır (sosyal ve ekonomik gelişimi hızlandıracak yeterlilikte ve önceliklendirilen alanlarda uygulanmalıdır.).
- Planlama, uygulama, izleme, değerlendirme ve raporlamalarda bilgi teknolojilerindeki gelişmelerden (uzaktan algılama, yapay zeka v.b.) daha fazla yararlanmak suretiyle bütüncül sistemler geliştirilmelidir. (veri güvenliği, tutarlılığı, temini açısından)

Recommendations and Conclusions

- What are the climate change mitigation and adaptation measures to increase the resilience of forests in Central Asia?
- What could be the best SFM practices under the impact of climate change?
- What are the nature-based solutions for SFM?