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Abstract

Starting in 2019, the effects of the COVID-19 epidemic, which affected the world, are gradually disappearing, and like other countries, the pandemic highly affected Türkiye. Many sectors experienced significant labor and productivity losses. 99% of the forests in Turkey are state forests, and the management and operation of these forests are under the authority of the General Directorate of Forestry. The General Directorate of Forestry has continuously evaluated whether to reduce the production amount during the pandemic period or not. As a result of its impressions on the market and customers, it has decided not to reduce the amount of production. It continued its production activities by taking the necessary precautions, and due to the insufficient production activities in the surrounding countries, there has been an intense demand for wood products in our country. In our country, which has been operating its forests in a planned manner since 1917, production studies were carried out in the areas that were planned in line with the demands, and there was a rapid increase in exports during the pandemic process, as seen in Table 1.

Table 1: Wood products export-import amounts

Due to the prohibition of inter-provincial travels and wood products tenders in meeting rooms at the beginning of the pandemic, after a 1-week trial, the process of conducting an electronic tender in Turkey, of which preparedness ended before, was started. The electronic sale system was adopted by all customers in a short time, and to hold tenders in the hall was not made even if permission was granted in the period after that date.
A large number of forest fires occur in our country, which is located in the Mediterranean belt. Especially after the fires in July of 2021, 138 thousand hectares of forest area were damaged by the fires. To fight fires more effectively State support was provided to increase the number of aircraft used in firefighting and strengthen the air fleet.

The total area of our country is 78.0 million hectares, and it was stated in the Forestry Statistics published by the General Directorate of Forestry in 2022 that the forest area is 23.2 million hectares. According to these published statistics, forest areas cover 29.8 percent of the country's surface area. 99% of these forests belong to the state and the state manages these forests. The remaining 1% of private forests are operated under state control.

The main income obtained from the forest is wood products, and in recent years, the non-wood product production process has been started to ensure the sustainable production of non-wood products and to protect biodiversity in forest areas, and many action plans have been made for the controlled and conscious production of non-wood products.

1. **General Economic Trends Affecting Forest and Forest Industry Sector**

According to the forestry statistics prepared by the General Directorate of Forestry in 2022, Turkey's forest assets have reached 23.2 million hectares, 8.1 million hectares of these areas, which is an international certification chain FSC (Forest) stewardship Council) certificate. Another certification chain, which is widespread in the world, is the PEFC (Program for the Endorsement of Forest with the Certification) certification. There is no certified forest area in the forests of our country yet. Studies on PEFC certification have been initiated by the General Directorate of Forestry in 2022, and the forest areas that have not received FSC certification are planned to be certified with PEFC certification.

GDP grew by 4.5 percent in the first quarter of 2020, while the agriculture sector grew by 3 percent, the industrial sector by 6.2 percent, and the services sector (including construction) by 3.2 percent in the first quarter. However, GDP contracted by 9.9 percent in the second quarter of 2020 due to the negative impact of the Covid-19 outbreak. In the second quarter, the industrial sector shrank by 16.5 percent, the services sector (including construction) shrank by 10.6 percent, while the agricultural sector grew by 4 percent. Rising inflation, a depreciating currency, and a fragile external position all cloud the outlook. Focus Economics Consensus Forecast panelists predict that the economy will shrink by 3.3% in 2020. GDP growth in 2021 is seen at 4.4%, down 0.5 percentage points from last month.
The IMF expects the unemployment trend to be heavily impacted by the negative economic impact of the COVID-19 pandemic; the rate is currently projected to rise to 17.2% in 2020 and drop slightly to 15.6% in 2021.

While 29% of Turkey's land is covered with forests, the contribution of the income from forest products to the state treasury is 0.003%. Türkiye is classified as an emerging market economy. The country is one of the world's largest producers of agricultural products; textiles; motor vehicles, ships, and other means of transport; and Construction Materials; There were also important developments in consumer electronics and household appliances. Reducing the current account deficit and combating high inflation are important priorities of the economic program. In this context, measures such as limiting credit-based expenditures and tight monetary policies put pressure on growth. In addition, Turkey's ongoing political instability and increasing tension in the peripheral countries, as well as the interest rate hikes and normalization statements in some countries, cause volatility in exchange rates and borrowing costs and reduce consumer and investor confidence. The high inflation in recent years has reduced purchasing power, and according to TUIK data, inflation was realized as 64.27 percent on an annual basis in 2022 and is expected to be 58% by the Central Bank by 2023.
2. Recent Legislation and Policy Measures

The nature and pace of economic recovery in different countries and aggregate will have important implications for existing, updated, and new nationally determined contributions (NDCs) under the Paris Agreement. Considering the uncertainties regarding the timing of the economic recovery and the emission routes, Turkey has experienced some difficulties in getting rid of the effects of COVID-19 during this period, and efforts are underway to overcome these difficulties. Apart from COVID-19, the Russia-Ukraine war and the fact that the internal turmoil in Syria is still not settled play an important role in Turkey's trade. While our country procures timber, which cannot be obtained from the domestic market to a large extent from Ukraine, this process has become inoperable due to the war. Since the people living in Syria are still not under state security, the shelter centers in the north of this country and the humanitarian aid for Syrian citizens in our country, such as shelter, food, and clothing, are still covered by Turkey, which negatively affects the economy of our country.

Developments and increasing demand for forest products are not enough to meet the number of products needed by the forest industry. Therefore, the industrial afforestation movement is a crucial point for this need. In this regard, the country's forests were examined, and the area determined in terms of the suitability of both the slope and the climatic conditions remained around 300 thousand hectares.

Despite the increasing production, forest products prices continue to increase on a Turkish Lira basis. When 2019 and 2020 are compared, forest products prices in 2020 are 15% higher than the previous year. Prices continued to increase in 2021, and after the second half of 2022, prices returned to stagnation.
Renewable energy policies and their effects on forest products markets

It is important to follow the developments in the markets and sectors that use forest products according to the economic developments in our country, to determine the changes to be made in the production programs, and to determine the precautions to be taken for the best evaluation of the products. In this context, it is aimed to monitor the changes in consumer demands, review the production programs accordingly, produce according to the demand, and spread the planted tree for sale. In this content; Systems will be developed to monitor the production-consumption chain of forest products by providing effective management in the production and marketing of forest products. Pieces of training were organized for the villagers and cooperative members, as well as the personnel working in production, and within this scope, the training process of 160 thousand people was completed.

Within the scope of the incentive, which allows electricity generation from sustainable products, significant developments have taken place in recent years. 52 companies have applied for electrical energy production from wood-derived biomass, which started in 2018, and these companies received energy production licenses. For the generation of electrical energy from wood-based biomass, 193 thousand tons of root wood, 31 thousand ster of cutting residues, and fuel were sold to 28 companies in 2022. As of July 2023, 68 thousand tons of root wood, and 11 thousand ster of cutting waste and fuel were sold to 16 companies.

In the OGM strategic plan; Strategic objective (g3): It is aimed to provide social benefit from the goods and services produced from forests and it is aimed to achieve the following objectives:

- Quality and efficiency in wood-based forest products will be increased, costs will be reduced, and sustainable competition will be ensured in domestic and foreign markets.
- Ecotourism services will be expanded, and non-wood forest product diversity and production will be increased.
- Taking into account national conditions and international developments, a standardization and certification system for forest products will be developed, and certified forest areas will be increased.
- Forest infrastructure will be strengthened; Pilot applications will be made to improve road standards in forests whose main function is production.
The General Directorate of Forestry continues its efforts to achieve these targets.

3. Market Drivers

Trade

The amount of Roundwood consumed is approximately 35 million m³, of which 4.5 million m³ was imported in 2017, while the amount of imports has been reduced to approximately 138 thousand m³ today. The demand of the forest sector is generally met by domestic resources. The increase in roundwood production depends on the supply-demand balance, if the demand is low, the production process slows down. Especially after 2018, the demand for round wood increased accordingly and thus the production increased. The most important point while increasing production is to have a sustainable forest policy. Financial fluctuation was expected in 2020 due to COVID-19, but both the forest product-producing OGM and the forest product processing sector continued to work at full capacity during this pandemic process, and this process started to slow down as of the second half of 2022.
Certification

The certification studies, which were initiated as a pilot study in Bolu in 2010, were completed in 2011 at the Aladağ Forestry Directorate and the dissemination process began. In the period of 2010-September 2018, a forest operation certificate (FSC) was obtained in the forest area of 2,367,000 hectares covering 29 forest management directorates.

With the expansion of the certification chain, OGM has obtained an FSC (Forest Steward Ship Council) certificate for 8.1 million ha and thus 35% of Turkey's forest area has been certified. By the end of 2023, the certified forest area under the FSC will reach 9.0 million hectares. An agreement has been reached between the Turkish government and the PEFC, and the process of setting standards for the certification of forests for PEFC continues.

The ongoing production in the forests of the Turkish Government is carried out by forest villagers, and training has been provided on occupational safety, production, standardization, and emergency in cooperation with the Ministry of National Education. As a result of the training received, certificates were given to those who were successful in the exam. In addition, because production work is considered dangerous work, it has been included in the scope of VQA, Workers working in production have been tested by authorized units that have received a certificate from VQA, and 160 thousand people have received VQA certificates. The certification process is ongoing and undocumented persons are not employed in forest areas.

4. Developments in forests and forest products markets sectors

Wood Raw Materials

The government of Türkiye owns 99% of forests which cover about 29% of the country with a 23,2ha area (forests stats 2021 General Directorate of Forestry is responsible for managing the forests of Türkiye and trend graphic for forests in Türkiye have been gradually increased since 2005 and are subject to increase to 30% of the country by 2030.

While the forest assets in the World decreased, Türkiye is one of the unique countries that has increased forest area over the decades. The presence of forests in Türkiye has increased to 3 million ha more since 1973 to now. The policy of increasing forest area in Türkiye is accepted by the Turkish Government beside Turkish government tries to plant on new areas each year. In this context, it is aimed to plant 7.5 billion saplings, which is the world population.
As the figure shows protection and extension of forest areas have gradually been increasing between 1973 - 2021. Türkiye’s forests have shown an increasing trend over the last decades. In the direction of global and national demands, the handling of the economic, ecological, social, and cultural functions of forests within ecosystem integrity and management of forests according to sustainable forest management principles is the basic approach of today’s forestry approaches. While the amount of wealth in our forests was determined as 0.93 billion m³ in 1973, this amount was determined as 1.74 billion m³ in 2022. As a result of these data, it has been observed that the wealth in our forest areas has increased by 0.81 billion m³ in amount and 87 percent in proportion since 1973.
It is seen that 20.4 million m³ of wood was produced from our forests in 1973. Of this production, 18,925,000 stere (14,193,750 m³) is firewood and the remaining 6,234,000 m³ is industrial wood production. By the year 2000, the amount of firewood decreased to 5.8 million m³ and the amount of industrial wood increased to 7.3 million m³. In 2022, the amount of firewood was 4.6 million m³ and industrial wood production was 25.5 million m³.
Forest and Climate Change

According to the data of the National Greenhouse Gas Inventory 2023 Report Land Use Land Use Change and Forestry (LULUCF) section, the annual carbon sequestration capacity of Turkey's forests is given below:

• In 2021, approximately 33.9 million tons of CO2 equivalent sequestration was calculated in 23 million hectares of forest areas. The value of 2021 means that the country, which is equivalent to 564 million tons of CO2, reduces by keeping 6% of its emissions.

• In addition, 15.7 million tons of CO2 equivalent sequestration was achieved in our processed wood products (lumber, particle board, etc.) in 2021. This is by removing 2.7% of the country's emissions. Mega forest fires in 2021 caused 10 million tons of CO2 equivalent emissions in the forest area category.

• 2.4 million tons of CO2 equivalent emissions were generated from other land uses (cultivated areas, pastures, wetlands, settlements, and other land uses) in the LULUCF sector, excluding forest areas.

• When the above figures are accounted for, the LULUCF sector made a total of 47 million tons of CO2 equivalent sequestration in 2021. This amount means that the LULUCF sector has been reduced by keeping 8% of the country's emissions (8.7% of forests and wood products), and the total national emissions have been reduced from 564 million tons to 517 million tons of CO2 equivalent.

According to the calculations of the GDF Sustainable Forest Management Annual Report, the amount of carbon stored in our forests is as follows: While the carbon stock accumulated in our forests in 2008 was 1.7 billion tons, the carbon stock accumulated in 2019 increased to 1.9 billion tons. This means that, by 2019, our existing forests sequestered 6.9 billion tons of CO2 equivalent from the atmosphere, stored 1.9 billion tons of it as carbon, and released it into the atmosphere as 5 billion tons of O2.
Wood-based panels (particle board, fiberboard, and MDF, OSB, plywood) and Pulp and paper;
Production and Marketing of Wood-Based Forest Products as a result of forestry activities carried out in forest areas within the framework of forest management plans, forest products such as logs, wire posts, mine poles, industrial wood, paper wood, fiber-chip wood, poles, sticks, and firewood are obtained and these products are used in construction, furniture, mining, fiber and chipboard, paper and other industries based on wood. In the 2010-2012 period, an annual average of 13 million 526 thousand m3 of industrial wood was produced, this figure reached an annual average of 15 million 560 thousand m3 in the 2013-2016 period. It shows a decreasing trend day by day. (GDF- 2019 Corporate Financial Status and Prospects Report). Industrial wood production reached 25.5 million m3 in 2022. The wood-based panel sector in our country has increased its production capacity very rapidly, and as a result, it has difficulties in supplying sufficient raw materials to the domestic market. Although there are 50 factories producing paper, there is only one facility that can produce cellulose from wood.

Graphic: Change of Industrial Wood Production by Years (2017-2022)