

A Forest Policy Evaluation of Meeting the Raw Material Demand in Forest Products Industry from Natural Forests[‡]

Hüseyin Çalışkan^{ID}*¹, Sezgin Özden^{ID}²

¹Çankırı Karatekin University, Graduate School of Natural and Applied Sciences, Department of Forest Engineering,18200, Çankırı/TURKEY

²Çankırı Karatekin University, Faculty of Forestry, Department of Forest Economics,18200, Çankırı/TURKEY

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*Corresponding author:

 hcaliskanphd@gmail.com

ABSTRACT

After the 1970s, the energy demand for wood has increased, all over the world. After the 1990s, with the effect of increasing population, sustainability of forest resources has become crucial. According to FAO and UNEP (2020) the world's forests have decreased 4.74 million hectares in the last 10 years. The aim of this study is to evaluate the effect of meeting the raw material demand for

wood from our natural forest resources in Turkey. Today, 11.8 million m³ of raw material is needed for the 21 Particle and Fibre Board enterprises in Turkey. The country has 22.9 million hectares, 1.7 billion m³ of forest assets. Raw material demand for wood is met by two different methods: importation or production. Although the need for raw materials is increasing day by day, it is seen that the import value has decreased from 1.5 billion dollars to 440 million dollars in the last 7 years, while the export value has increased by 250 million dollars. In the same period, the amount of industrial wood, produced by Turkey by using local resources, has increased by 11 million m³. In order to meet this demand, our state forests are seen as the first choice due to the high costs of import. Having this policy has two possible consequences. It causes a decrease in the number of species in mixed forests. The fact that the wood production capability of Turkey's forests is not sufficient to meet all the needs causes the future of our forest assets to be endangered.

Keywords: Wooden raw material, forest policy, forest resources management, forest industry.

Orman Ürünleri Sanayinde Hammadde Talebinin Doğal Ormanlardan Karşılanmasının Ormanlık Politikası Açısından Değerlendirmesi

ÖZ

1970'lerden sonra tüm dünyada oduna yönelik enerji talebi artış göstermiştir. 1990'lı yıllardan sonra artan nüfusun da etkisiyle orman kaynaklarının sürdürülebilirliği büyük ölçüde önem kazanmıştır. FAO ve UNEP'in (2020) Dünya Ormanlarının Durumu başlıklı raporuna göre, dünya ormanları son 10 yılda 4,74 milyon hektar azalmıştır. Bu çalışmanın amacı, Türkiye'deki odun hammadde talebinin doğal ormanlarımızdan karşılanmasına etkisinin değerlendirilmesidir. Günümüzde Türkiye'deki 21 adet MDF ve Yonga Levha işletmesi için 11,8 milyon m³ hammaddeye ihtiyaç duyulmaktadır. Ülke 22,9 milyon hektar, 1,7 milyar m³ orman varlığına sahiptir. Odun hammadde talebi ithalat veya üretim olmak üzere iki farklı yöntemle karşılanmaktadır. Hammadde ihtiyacı her geçen gün artsa da son 7 yılda ithalat değerinin 1,5 milyar dolardan 440 milyon dolara düştüğü, ihracat değerinin ise 250 milyon dolar kadar arttığı görülmektedir. Aynı dönemde Türkiye'nin, yerel kaynaklarını kullanarak ürettiği endüstriyel odun miktarı 11 milyon m³ artış göstermiştir. Bu talebi karşılamak için devlet ormanlarımız, ithalat maliyetlerinin yüksek olması nedeniyle ilk tercih olarak görülmektedir. Bu politikaya sahip olmanın iki olası sonucu vardır. Karışık ormanlarda tür sayısında azalma meydana gelmektedir. Türkiye ormanlarının odun üretim kapasitesinin tüm ihtiyaçları karşılamaya yetmemesi, orman varlıklarımızın geleceğinin tehlikeye girmesine neden olmaktadır.

Anahtar kelimeler: Odun hammaddesi, ormanlık politikası, orman kaynaklarının yönetimi, orman endüstrisi

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1. Introduction

Contractions in economies make policy important in social and economic life. Erik and Koşaroğlu describe the rise of the prices of fossil fuels, from 3 to 12 dollars per barrel in the 1970s, as an important turning point in terms of economic policies. The Center for People and Forests (RECOFT, 2010) states that this situation has caused the thought that forests could be a solution to the energy problem, thus, it has been paved the way for the energy demand for wood. In the 80s, the concepts of agricultural forestry came to the fore and the demand for timber began to

increase all over the world. After that period, many private companies were established and thus the exploitation of forests has accelerated. Therefore, between 1975 and 1985 the consumption of firewood, industrial round wood and pulpwood increased by 25%, thus “Forest Management” became a critical policy area for the 1990s (Hyde and Newman, 1991). Shortly, human needs have increasingly gravitated towards the forest in history. Thus, in the long term, a tendency has emerged towards forestry policy in order to meet the needs of the society (Gümüş, 2014).

Table 1. Annual change rate of forest areas in the world (FAO, 2020)

Year	Net change (million ha/year)	Net change rate (%/year)
1990-2000	-7.84	-0.19
2000-2010	-5.17	-0.13
2010-2020	-4.74	-0.12

Although the forest seems to be edaphic, gift or never-ending, it could decrease over time if it is not managed effectively. Although FAO's Global Forest Resources Assessment Report (Table 1) states that the annual rate of net forest change is progressing in a positive way, this does not change the fact that the existing forest assets for the whole world are still decreasing. This brings to mind the concept of “sustainability” in order to use the forest assets we have properly. The aim of this study is to evaluate the effects of meeting the raw material demand in Turkey on the concept of sustainability, through the current policy.

2. Material and Method

The method of the research is to evaluate by bringing together written and electronic sources related to the subject. These resources include official statistics, scientific researches, reports, books, articles and so on. In this study, firstly, the import and export statistics were examined, published by the Turkish Statistical Institute. Then these data were examined together with previous studies, and discussed if Turkey's forests could meet the demand.

3. Results

The concept of sustainability, which means not compromising the needs of future generations while meeting our own needs, has been firstly introduced with the Brundtland report in 1987. According to Brundtland, future generations do not vote for our decisions today. Therefore, the consequences of our

decisions should not affect them. For this reason, defining and following-up the concept of Sustainable Forest Management (SFM) for future generations is important in order to serve our responsibilities towards them.

This concept includes many global and regional organizations, various processes and initiatives called “National Forest Regime”, and also 3 important Rio conventions as United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD) and United Nations Convention to Combat Desertification (UNCCD). These legally binding agreements led to the emergence of the Cooperation Partnership on Forests (CPF) in 2001 and also many negotiations and organizations that formed it (OGM, 2019).

According to Turkey's 2019 Sustainable Forest Management Criteria and Indicators Report, this concept has become an integral component of international agreements in the last 20 years and is the most important concept that forms the basis of modern forestry. This concept is related not only to manage primary or byproducts of forest, but also how quickly to be healed the damage we inflict on them (OGM, 2019). On this basis, as well as in the whole World, it has a great importance to be in cooperation and dialogue between stakeholders.

Sustainable Forest Management criteria and indicators for Turkey are listed under 6 main headings, provided that they are divided into 40 quantitative indicators in total (OGM, 2020a).

1. Forest Resources and Its Contribution to the Global Carbon Cycle

2. Health, Vitality and Integrity of Forests
3. Production Capacity and Functions of Forests
4. Forest Biodiversity
5. Protective Functions of Forests
6. Socio-Economic Functions of Forests

The subject of this article may seem directly related to criterion 3, but it is indirectly related to all of the criteria.

Primary/by-products and services provided by forests are among the most important natural resources of the world (OGM, 2019). They not only participate in tasks such as maintaining the soil or cleaning the water, but also play an active role for meeting many vital needs such as providing food, fuel and shelter. In addition, as a result of discoveries made by chance or by research, it has been determined that some treatments used since two thousand years ago were obtained from forests. This is actually an important step to reveal the history of the benefit we derive from forests. From this point of view, forests have been directly related to our survival reflexes since the existence of humanity. However, as the pressures on the forests increased due to the increasing population, the economical use of the available resources has gained great importance.

According to The State of the World Forests Report by FAO and UNEP (2020), there are 4.06 billion hectares of forest area in the world, 25% of which is virgin, and it has been reported that since 1990, almost 420 million hectares of forest area has

been lost due to conversion to different land use forms. It is estimated that 4 thousand years ago, there was approximately 8 billion hectares of forest area on Earth (Akay, 2019). This data is twice of the forest having in the world. Thus, it can be thought that the reason for this decrease is "human beings".

Of course, there are also natural causes that affect the decline of forests, but these are not seen as causes that can be controlled. The fact that we meet our current needs from forests threatens sustainability if we do this carelessly.

Timber, particle and fibre board, which are the main subjects of the forest products industry, have become ones of the important branches of industry in many countries of the world (Koç et al., 2017). As a natural consequence of the increase in the population of the country, the demand for these products is increasing day by day. In order to meet this demand, there are 21 (YOMSAD, 2021) fibre and particle board factories in Turkey, with annual production amount of 6.7 million m³ for fibre and 5.1 million m³ for particle board (Koç et al., 2017).

This production capacity should be supported by the supply of raw materials from the country and abroad by importing. Thus, it is necessary to look at the statistics of import and export of raw materials. For this reason, the import and export statistics of TURKSTAT as the item "Wood and articles of wood; wood charcoal" is examined in this study. These statistics are indicated in figure 1 and 2.

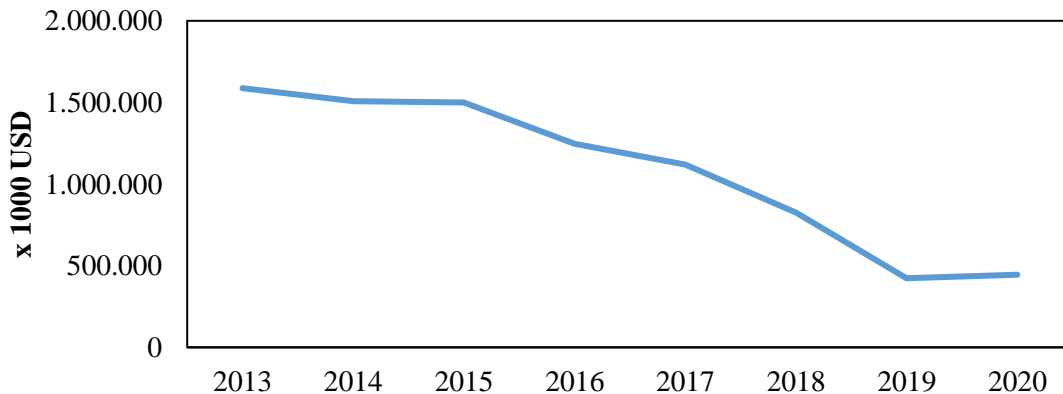


Fig.1. Import by chapters, wood and articles of wood; wood charcoal (TÜİK, 2020)

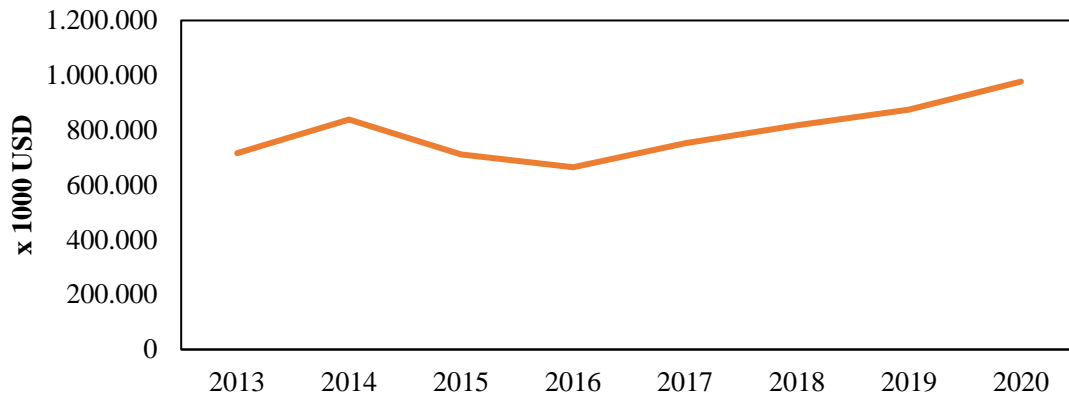


Fig.2. Export by chapters, wood and articles of wood; wood charcoal (TÜİK, 2020)

In addition, the import and export statistics between 2013-2020 are given about the "forestry and logging" category in figure 3 and 4. In addition, the

last ten years' of firewood and industrial wood production statistics published by the General Directorate of Forestry are given in figure 5.

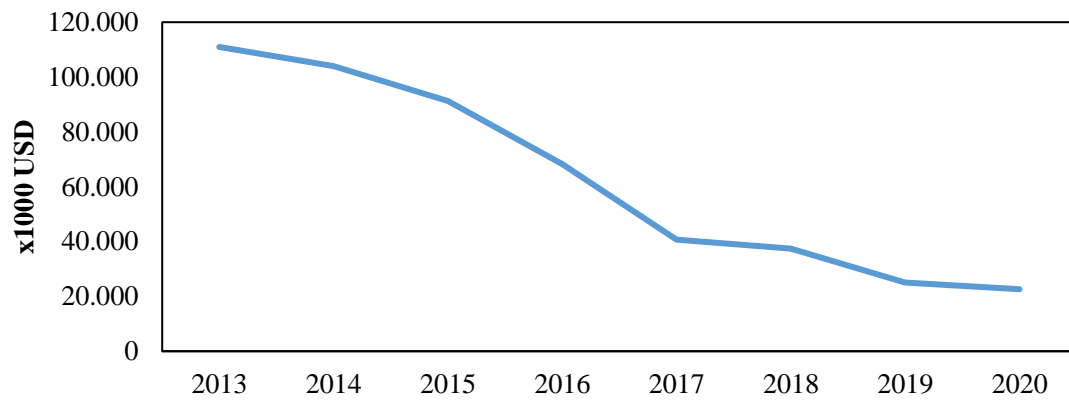


Fig.3. Imports by Economic Activities (Forestry and Logging) (TÜİK, 2020)

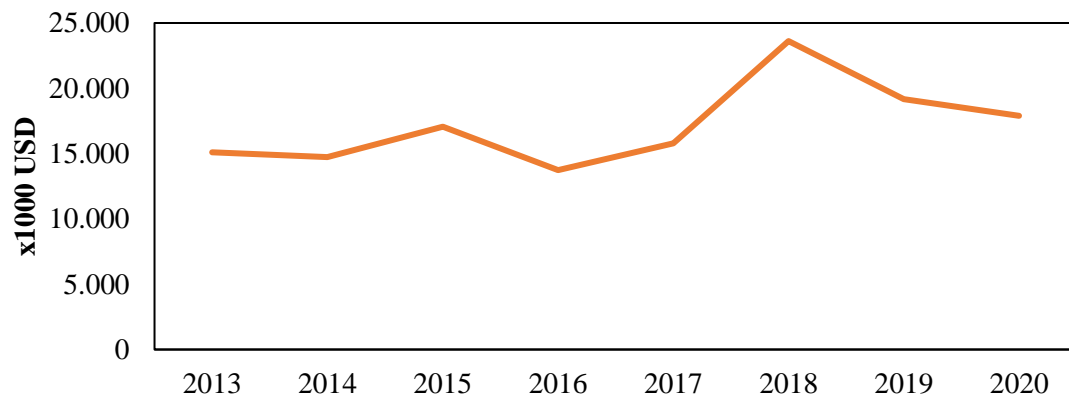


Fig.4. Exports by Economic Activities (Forestry and Logging) (TÜİK, 2020)

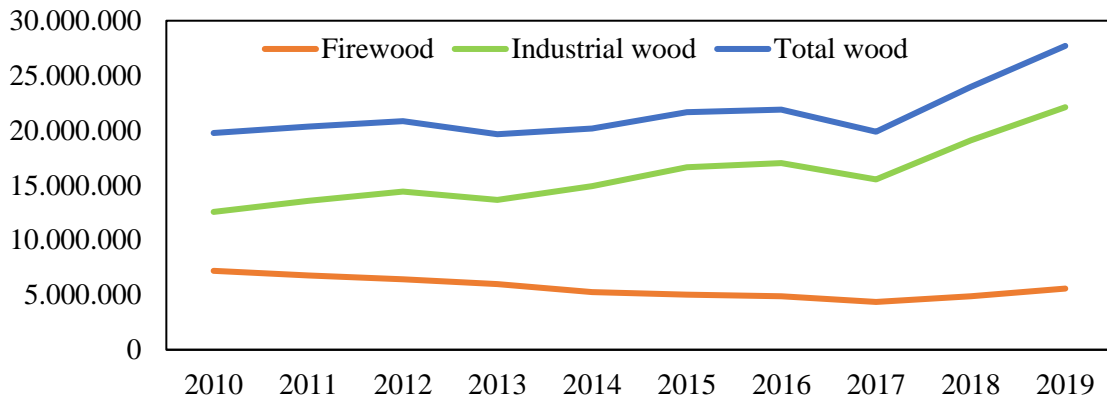


Fig.5. Raw wood production statistics (m³), (OGM, 2020b)

It is normal to change for the import and export demands of countries with the increasing population over the years. If we examine the graphs, we see that there are sharp turns at some points. The reason for this is demand changes in imports and exports due to some reasons. The unbalanced movements of the exchange rate over the years are among the main reasons for these changes. Therefore, the exchange rate changes for the last 20 years are given in figure 6.

A closer look at figure 6 shows that the changes in 2018 and after, were more severe and the Turkish lira lost its value against the US dollar by more than 40% (Güngen, 2018) for a period. Therefore, before interpreting this information and tables, it is necessary to investigate the meaning and causes of the peaks in the charts related to the USD currency.

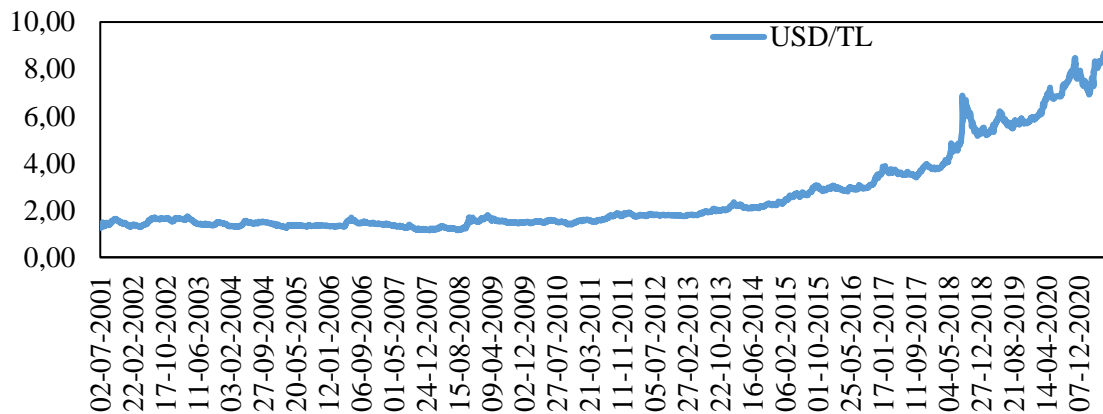


Fig.6. Exchange of USD/Turkish lira in the last 20 years (TCMB, 2021)

Kundak et al. (2018) stated the exchange rate as one of the factors affecting import dependency. They state that the increase in the exchange rate increases the prices of imported, intermediate and investment goods and it increases the import costs. Therefore, this increase in the exchange rate causes domestic intermediate and investment goods to be substituted for imported goods in the short run. In addition, we can see that the 1994, 1999, 2001, 2008-2009 crises had a serious negative impact on the manufacturing industry. In the same manner, Kundak stated in the “Criticism Against the Import Substitute Industrialization Strategy” section of her Ph.D. thesis in 2015 that this situation may cause “inequality in resource use, that is, waste of resources”. In addition,

this situation may change the composition of imports and cause the investment to be allocated to imports of intermediate goods to shift to different areas such as technology.

In the manufacturing industry, especially when we consider the factories and sectors that produce on the basis of forest products, we see that some of the most important factors driving the sector to import are customs policies, exchange rate, and existing laws. For this reason, when we look at figure 5, there is a need to clarify whether the increase in industrial wood production and thus the total wood production, which increased regularly until 2017, with a faster acceleration after 2017, if this is related to policy and law changes. For this purpose, we also examined the Forest Law No. 6831, which regulates the production

of forest products in Turkey, and the changes made in some other laws related to the law.

The "Additional article 16" added with the law numbered 7139 and the amendments to the 1st article made with the law numbered 7255 are given below.

Additional article 16- (19/4/2018-7139/17) Places where there is no benefit to keep them as forests by the Ministry of Forestry and Water Affairs, in terms of science and which cannot be converted into agricultural land" and "the areas whose borders are determined by the President of the Republic that are stony, rocky, unproductive and do not actually have the characteristics of forest, on which settlements existed or on which settlements were suitable to be established at the date of entry into force of this article", are taken out of the forest borders by the General Directorate of Forestry in accordance with the procedures and principles to be determined by the President and registered in the name of the Treasury in the land registry. The lands under the administration of the state or the property of the Public Purse are allocated to the General Directorate of Forestry to be forested, but not less than twice the area removed from the forest borders. (Resmi Gazete, 2018)

With the law numbered 7139, 13 amendments were made to the Forest Law in 2018, and especially the above-mentioned article caused some controversies. Ok et al. (2018) state that many amendments introduced by this law are unconstitutional and they also state that some areas are being tried to be removed from the forest character. In the same manner, Foresters' Association of Turkey had a publication titled as Management and

Organization in Forestry, and in this publication, they state that as a result of the law changes made in 2012 and 2018, forest areas are going to decrease.

The amendment made in Article 1 of Law No. 6831 is as follows.

(28/10/2020-7255/3) Lands outside the forest boundaries and covered with all kinds of trees and shrubs grown by sowing and planting on owned lands, regardless of the size, are not considered forests (Resmi Gazete, 2020).

Erdönmez and Yurdakul Erol (2021) stated that with the law numbered 7255, forest areas created by sowing and planting on owned lands have been opened for construction and stated that these areas have been taken out of the forest status. These two changes shed light on the fact that the raw material pressure, which is already abundant on forests, will continue to increase uncontrollably.

For this reason, it is necessary to investigate the sharp decreases in Charts 1 and 3, the raw material source of the increases in Charts 2 and 4, and the production capacity of Turkish forests, which is the main raw material source of exports. In our country, it is reported by the General Directorate of Forestry that in Turkey, there are over 22.9 million hectares of forest area (OGM 2020b). Every year, production is made from these forests in the amounts determined by the General Directorate of Forestry. Atmış (2020) explained the relationship between production and cutting budget in his article titled the Changes in Turkey's Forest Presence in the table below. Atmış, in this table, shows that the production amount is more than the cutting budget planned on the forest management plans.

Table 2. Relationships between increment, production and cutting budget (Atmış, 2020)

Year	Increment (m ³)	Cutting Budget (m ³)	Production (m ³)	C.Budget / Increment (%)	Production / Increment (%)	Production / Cutting Budget (%)
2012	41.025.353	13.414.927	19.248.871	33	47	143
2015	45.904.083	15.942.459	20.404.838	35	44	128
2018	47.000.000	19.014.320	22.747.978	40	48	120

There are two important points in this table. The first, production amounts are higher than cutting budget. The second, although there is an increment of 14.5% (5.974.647 m³) between 2012 and 2018, there is an increase of 41.7% (5.599.393 m³) in the cutting budget. The Foresters Association of Turkey (TOD 2020a) explains the reason for this increase as the need for raw materials to shift to domestic forests, because of increasing the cost of import. If this trend continues, they state that deforestation will accelerate (TOD 2019).

Looking at the statistics of the General Directorate of Forestry, forest areas and incomes are increasing.

However, according to Kömürlü (2019), the mixed forest structure, especially in some parts of the Black Sea Region, has decreased from 10 different species to 3-5 species. In this case, although the amount of forest tends to increase, the forest structure changes undesirably. According to TOD (2019), this is one of the most important problems occurring in Turkey's mixed forests.

Considering the reasons for this situation, we should evaluate the import and export graphics together with the statistics of forestry. Gültekin (2019) states that Turkey's forest industry demand is primarily tried to be met from state forests. The 21

(YOMSAD, 2021) Fibre and Particle Board enterprises that make up the Forest Industry have an annual raw material demand of 11.8 million m³ (Koç et al., 2017) and it increases day by day. Atmış (2020) states that the recent increase in industrial wood-based facilities has created an increase of demand. Koç (2017) states that 76% of 15.5 million m³ of industrial wood production is used to meet the raw material demand of the Forest Industry. TOD (2020b) defines this situation as “violent interventions in the forest to provide cheap raw materials to the industry, under the pressure of the wood sector”. In addition, TOD (2019) states that the wood production capability of forests is not sufficient to meet the entire industrial raw material requirement.

4. Conclusions and Discussions

This problem has been going on for years, as can be understood from the literature reviews examined in this study. It is seen that effective intervention tools in forest resources management in Turkey are misused by decision-makers or interventions are not made in a way that maximizes the benefit (Daşdemir, 2006).

Turkey's forests, especially after the establishment of the country, have suffered great losses due to the deficiencies in the field of technology. In this case, there is an absolute effect of the periodic population density or the increasing population. The importance of forests for future generations is indisputable and must be protected and managed sustainably. Erdönmez and Yurdakul Erol summarize this situation as follows:

There were no positive results of the changes made in terms of forestry. On the contrary, the problems have deepened and turned into an inextricable situation, especially with regard to 2b. Despite this, the perspective of politicians on forestry has almost never changed, they have directed forestry for their own political interests, instead of producing rational solutions to forestry and forestry problems. (Erdönmez and Yurdakul Erol, 2021).

When we look at these changes in terms of sustainability, we see that the changes combined with the economic crises in recent years have increased the pressure on forests. In fact, this issue must be evaluated as the triangle of forest, politics and economy. The fact that the purchase of raw materials from abroad was affected by the economic conditions have caused the changes in the Law No: 6831 to increase the production of raw materials in the country for the supply of raw materials due to the current pressures. This situation is the result of using forestry to counter political pressure by citing economic problems. As a result of the changes made,

it is understood from the statistics given in this study that the pressure on the forests is increasing. Therefore, as Kundak and Aydoğuş (2018) stated, the increase in the prices of imported intermediate and investment goods puts additional pressure on local production as seen in figures 1, 3 and 5.

The cutting budget (Eta) is the amount of wood planned to be cut from forests and indicates the amount of wooden raw material that must be taken and being possible during the operation period, according to certain purposes. This concept is very crucial as it forms the basis of the product taken from the forest. At the same time, it allows taking measures for the efficiency and continuation of the forest. The cutting budget must be determined by the technical forester according to certain technical requirements. However, it is determined by the orders given by the General Directorate of Forestry in recent years. However, the forester should be able to plan without being under pressure because they know the field applications and requirements.

Article 169 of the Constitution orders the protection of forests by increasing. Contrary to this, a law, regulation even or an order may not be given or issued against the article. For this reason, the orders of the General Directorate of Forestry are both unconstitutional and put pressure on the planners, causing the cuts to be made more than the increment amount. As the Turkish Foresters Association (2020a) says in its article titled “Excessive wood production ends forests and forestry”; this situation causes increasing the cutting budget, and then regeneration works are taken before of the planned date. This means trying to meet market needs by causing both ecological and economic losses. In short, the results of the changes made in forestry policies emerge after many years (Erdönmez and Yurdakul Erol, 2021). For this reason, it is necessary to think carefully in order to see the results and effects of the policy changes made in the past and to make better predictions for the future.

Conflict of Interest

The authors declare that they have no conflict of interest.

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