

THE IMPACT OF THE CAP ON THE SUSTAINABILITY OF FORESTRY SECTOR IN BULGARIA

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Abstract

The aim of the paper is to measure the impact of CAP on sustainability of forestry sector in Bulgaria. In the context of the sustainability of the forest sector is needed to assess the impact of the CAP on the competitiveness of the sector, ecologist compliance on the sector and its impact on social factor. The state is required to determine the institutional framework (including national policy and institutions for its implementation in the sector) for sustainable forest development, ensuring support all three pillars. At present, Bulgaria has a significant forest resource - forest areas occupy more than a third of the country. Share of forests of the land used in Bulgaria increased in the last 10 years from 30.51% to 33.93%. The positive trend of growth of forests in Bulgaria coincides with the positive growth trend of this indicator at EU level. The growth rate of forests in Bulgaria abandons an annual average of 3% compared to the EU, further efforts are needed to develop the forestry sector to catch up with the EU average. Financial mechanisms to support forestry covered by the CAP as well as those included in the state direct sectoral support have a multiplier effect and cause secondary effects in other (related) sectors (credit, agriculture, renewable energy, tourism and construction).

Keywords: sustainability, forestry, CAP, competitiveness, rural development

Abstrakt

Das Ziel des Papiers ist es, die Auswirkungen der GAP auf die Nachhaltigkeit des Forstsektors in Bulgarien zu messen. Im Zusammenhang mit der Nachhaltigkeit des Forstsektors ist notwendig, um die Auswirkungen der GAP auf die Wettbewerbsfähigkeit des Sektors, die Einhaltung der Ökologievorschriften im Sektor und die Auswirkungen auf den sozialen Faktor zu bewerten. Der Staat muss den institutionellen Rahmen (einschließlich der nationalen Politik und der Institutionen für ihre Umsetzung in diesem Sektor) für eine nachhaltige Entwicklung des Waldes festlegen und dabei die Unterstützung aller drei Säulen sicherstellen. Gegenwärtig verfügt Bulgarien über eine bedeutende Waldressource - die Waldgebiete nehmen mehr als ein Drittel des Landes ein. Der Anteil der Wälder an der in Bulgarien genutzten Fläche ist in den letzten 10 Jahren von 30,51% auf 33,93% gestiegen. Der positive Wachstumstrend der Wälder in Bulgarien deckt sich mit dem positiven Wachstumstrend dieses Indikators auf EU-Ebene. Die Wachstumsrate der Wälder in Bulgarien liegt im Vergleich zur EU bei durchschnittlich 3% pro Jahr, weitere Anstrengungen sind erforderlich, um den Forstsektor zu entwickeln und den EU-Durchschnitt zu erreichen. Finanzielle Mechanismen zur Unterstützung der Forstwirtschaft, die von der GAP abgedeckt werden, sowie diejenigen, die in der staatlichen direkten sektoralen Unterstützung enthalten sind, haben einen Multiplikatoreffekt und verursachen sekundäre Effekte in anderen (verwandten) Sektoren (Kreditwesen, Landwirtschaft, erneuerbare Energien, Tourismus und Bauwesen).

Stichworte: Nachhaltigkeit, Forstwirtschaft, GAP, Wettbewerbsfähigkeit, ländliche Entwicklung

Résumé

L'objectif de ce document est de mesurer l'impact de la PAC sur la durabilité du secteur forestier en Bulgarie. Dans le contexte de la durabilité du secteur forestier est nécessaire pour évaluer l'impact de la PAC sur la compétitivité du secteur, la conformité écologique sur le secteur et son impact sur le facteur social. L'État est tenu de déterminer le cadre institutionnel (y compris la politique nationale et les institutions pour sa mise en œuvre dans le secteur) pour le développement durable des forêts, en veillant à soutenir les trois piliers. À l'heure actuelle, la Bulgarie dispose d'une ressource forestière importante - les zones forestières occupent plus d'un tiers du pays. La part des forêts dans les terres utilisées en Bulgarie a augmenté au cours des dix dernières années, passant de 30,51 % à 33,93 %. La tendance positive de la croissance des forêts en Bulgarie coïncide avec la tendance positive de la croissance de cet indicateur au niveau de l'UE. Le taux de croissance des forêts en Bulgarie abandonne une moyenne annuelle de 3 % par rapport à l'UE, des efforts supplémentaires sont nécessaires pour développer le secteur forestier afin de rattraper la moyenne de l'UE. Les mécanismes financiers de soutien à la sylviculture couverts par la PAC ainsi que ceux inclus dans le soutien sectoriel direct de l'État ont un effet multiplicateur et provoquent des effets secondaires dans d'autres secteurs (connexes) (crédit, agriculture, énergies renouvelables, tourisme et construction).

Mots clés: durabilité, sylviculture, PAC, compétitivité, développement rural

Introduction

The theory of sustainability of forests and forestry products currently focus primarily on the three pillars of sustainable development (1) competitiveness, (2) environmental compatibility and social (3) responsibility (Ivanov, Radev, Vachevska and Borisov, 2009). The versatile nature of forestry as a dynamic system, both bound and dependent in time and space from the state and changes in the environment, climate, politics, economy, technology and society in general, both at a micro and macro level and also thus, the manifold nature of the resistance, create a wide scope for interpretation of the concept "stability of forestry". Sustainability of the sector essentially refers to the ability of this production system to develop at a steady pace, adapting to ongoing changes in time and space, in terms of basic parameters of the surroundings influencing its development (Ivanov, Radev, Borisov and Dimitrova, 2012). In this regard, the sustainability should be seen in the context of the situation and according to current trends in this type of production and applied policies (Nikolov, Radev and Borisov, 2013). The importance of forestry as a major source of a wide range of products and services strategically important for the development of the national economy requires the use of interventions by the state (Borisov and Marinov, 2013). In rural areas forestry sector is one of the few sectors that enable the livelihood of the local population and play role of major source of employment and income (Nikolov Borisov and Radev, 2014). Realizing the importance of this sector for years the state seeks through appropriate intervention measures to preserve forests as a natural resource and to enable them to be a profitable business. After

accession to the EU, Bulgaria has the opportunity to receive financial support for conservation and development of forestry. Agreeing and implementing the Common Agricultural Policy (CAP), the state is obliged to assist the development of the forestry sector while respecting the principles of sustainable development.

The aim of the paper is to measure the impact of CAP on sustainability of forestry sector in Bulgaria for one decade.

The impact of CAP on the development of forestry in recent years, clearly felt in terms of increase in areas producing forest products, and in terms of growth of exports of these products and increase the competitive advantages of Bulgaria in this sector (Borisov, Radev and Dimitrova, 2014). In the context of the sustainability of the forest sector is needed to assess the impact of the CAP on the competitiveness of the sector, ecologist compliance on the sector and its impact on social factor. The state is required to determine the institutional framework (including national policy and institutions for its implementation in the sector) for sustainable forest development, ensuring support all three pillars.

National policy on forestry is conducted by the Council of Ministers (CoM) by the Minister of Agriculture, Food and Forestry. In accordance with the Constitution of the Republic of Bulgaria and implementing regulations, the Minister of Agriculture, Food and Forestry implements the state policy in the field of forestry and hunting. Minister of Agriculture, Food and Forestry is the central body of executive authority that manages, coordinates and controls the implementation of state policy in the field of agriculture, rural development, forestry, fisheries and aquaculture.

Other institutions involved in the implementation of the national policy for sustainable forestry are the Ministry of Finance (MoF), Ministry of Environment and Water (MoEW), the Ministry of Interior (MoI), Ministry of Energy (ME). The controlling authority on financial matters is the Ministry of Finance on environmental issues - environment, on production of heat and electricity from renewable sources has ME on prevention and fight against illegal activities in forest areas and forest fires - MIA. ME manage, organize and coordinate the implementation of policies for enhancing the competitiveness of the national economy and individual businesses, including the forest industry - woodworking, furniture and pulp and paper.

Financial assistance for the development of agricultural and forestry within the CAP was performed using the two approaches (post intervention). The first approach focuses on the sustainable development of the sector through the implementation of the direct area payments. The second approach (pillar) is the use of financial schemes to promote investment activity in the sector. The second approach starts by applying the measures included in the Program for Rural Development 2007 - 2013 (RDP).

Table 1. Measures to support the sustainable development of the forestry sector. Source: Own.

	RDP 2017-2013	RDP 2014-2020
Specific actions for sustainable forestry	Measure 122; Measure 123; Measure 223; Measure 226;	Measure 08; measure 15

Financial support for the development of forest is provided through the use of 4 axis: Axis 1 "Improving the competitiveness of the agricultural and forestry sector"; Axis 2 "Improving the environment and rural development"; Axis 3 "Quality of life in rural areas and diversification of the rural

economy"; Axis 4 "Leader Approach". In the RDP 2007-2013, the measures which may be determined as a specific and entirely designed for the development of the forestry sector are measure 122, measure 123, measure 223 and measure 226. In subsequent RDP 2014-2020 measures specifically designed for the sector are : measure 08 and measure 15 (see table 1)

Key instrument to support the sector over the last 10 years is the Program for Rural Development (Phase 1 and Phase 2). The implementation of the RDP meeting in the beginning number of challenges such as insufficient government capacity for implementation of the program; low public awareness of the opportunities that the RDP allows for the development of the sector; timidity and distrust of the population to the proposed financial assistance under the RDP; complicated application procedure and insufficient mechanisms to assist farmers in applying for the grant of financial assistance; failure to provide co-financing of projects by farmers and others (Borisov, Radev and Nikolov, 2014).

Results

Impact of CAP on areas of forests on productivity in the sector. At present, Bulgaria has a significant forest resource - forest areas occupy more than a third of the country. The area at 31.12.18 is 4,230,825 hectares, of which 2,913,090 ha (68.85%) are State forest areas managed by state-owned enterprises, 172 473 ha (4.08%) are State forest areas managed by the Ministry of Environment and Water (MoEW), 11 415 ha (0.27%) - State forest areas which are experimental forest, 546,931 ha (12.93%) - forest managed by municipal authority , 426,082 ha (10.07%) - areas owned by private individuals, 43 916 ha (1.04%) - forest areas owned by private entities and 20 911 ha (0.49%) - forest areas owned by religious communities.

Forest areas - agricultural lands are 96 007 ha (2.27%). The forested area is 3 864 965 hectares, has increased by 7307 hectares to 2008 as species distribution footprint - dominated by deciduous forests - 69.5% compared to conifers - 30.5%. According to data from the departmental report forms of the National Forestry (YAG) the percentage of the wood stock by types of woods and woody species composition is: broad - 55.5%, including oaks - 21.3%, beech - 24.0%, hornbeam - 3.8% acacia - 1.2% and more. Conifers have 44.5 percent of the total growing stock, incl .: White Pine - 21.5%, black pine - 10.8%, spruce - 8.6%. The average total annual forest growth in Bulgaria is 13 974 000 m³, and the average annual timber production is around 8.4 million m³ standing pulp. The total stock of wood in the forests in Bulgaria 31.12. 2010 is set at 6.4 million m³, of which 42.2% are concentrated in recreation and protection of forests and protected areas. The average stock per 1 ha is 172 m³. There is a trend of increasing stock of wood per hectare, with strong dynamics in coniferous forests. On the other hand, sets the trend to reduce the average stock per hectare in coppice forests for conversion into seed. The average annual growth of wood increased from 14.1 million m³ to 14.4 million m³ of carbon stocks in forest biomass of tree species also noted an increasing trend in recent years.

The average age of the forests over the past 10 years increased from 49 to 53 years. In coniferous forests with the largest area participation are those aged 21 to 40 years - 42%. Coniferous trees older than 80 years occupying 20.9% of the area of coniferous forests. In deciduous forests, the share of middle-aged and mature trees. The average age of the coppice forests for conversion into seed and low-stem forests also increases.

In the pre-accession period (2000 - 2007) the share of the forests of the land used in Bulgaria increased from 30.51% to 33.93% (see Fig. 1). After accession to the EU (in 2008) the growth rate of the areas occupied by forests continues to grow. It is noted that over the years the proportion of forests from land use grows an average of 0.6%. The positive trend of growth of forests in Bulgaria coincides with the positive growth trend of this indicator at EU level. The positive trend that remains stable over the years demonstrates the positive impact of the CAP on the sustainability of the areas occupied by forests in the country. However, the area of forests remain below the average of the forests in the EU as in terms of this indicator Bulgaria abandons an annual average of 3%. Further efforts are needed to develop the forestry sector to catch up the EU average in terms of the areas occupied by forests.

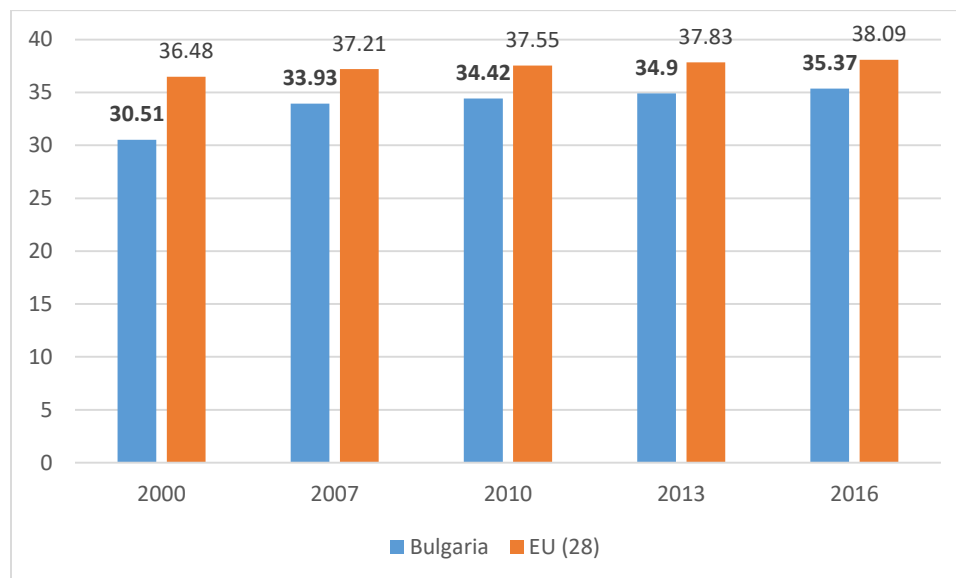


Figure 1. Dynamics of the areas occupied by forests in Bulgaria and the EU, represented as a share of total utilized land. Source:FAOSTAT www.fao.org

In the year of Bulgaria's accession to the EU (2008) there is a sharp change in the volume of electricity produced from forestry production expressed in value. The graph shows that the output of 209 million BGN only in one year was reduced to 157 million. Lev (see Fig. 2). At the beginning of 2010 there is a boom in the sector in terms of production of forest products, which lasted until 2015, namely the production of 157 million BGN reached 380 million BGN, which is up nearly 2.3 times. Relying on this indicator could be noted that the CAP affects an extremely positive impact on production in the sector over the past 10 years.

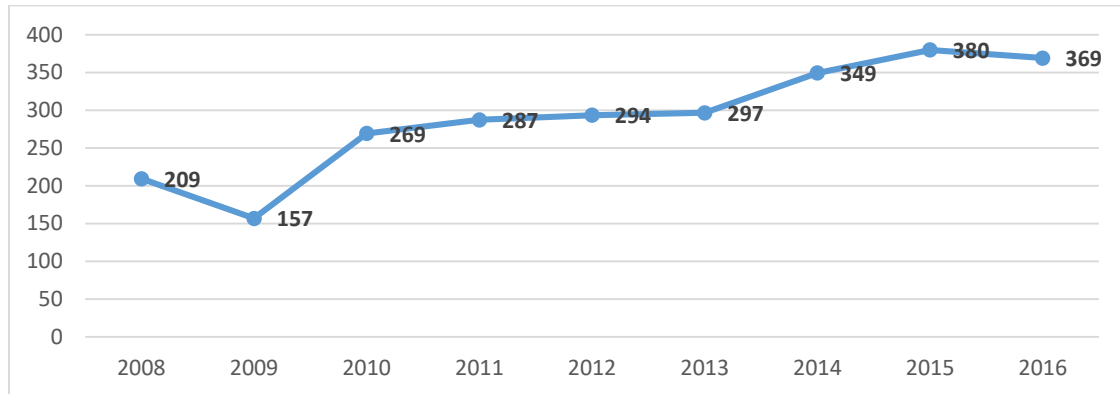


Figure 2. Dynamics of production of the sector expressed in millions BGN. Source: FAOSTAT

www.fao.org

The expansion of areas under forests and increase the production of forest products are the factors that affect the exports of products produced by the sector. In the period 2007 - 2013 exports increased from 217.1 million BGN and reached its peak in 2013 to 329.3 million BGN (see Fig. 3). After 2013 exports began to gradually shrink and reaches values 306.9 million BGN. Despite this downward trend in the value of exports, it generally has increased 1.4 times over the past 10 years. The positive trend of increase in exports in the period 2007-2013 demonstrates that the CAP positively affect the competitiveness of the forest sector in the international market.

Imports of forest products in the country in 2007 amounted to 291.5 million BGN, after the country's accession to the EU imports declined sharply to 228.8 million BGN (in 2010). Followed by a period of recovery and expansion in imports as he nearly equaled in value of exports in 2018, namely reaching levels of 303.3 million BGN (see Fig. 3). The sharp fluctuations in exports and imports are determined by the restructuring of the market orientation of the sector. As part of the EU country meeting the high competitiveness of other EU Member States of the European market. However, Bulgarian forestry able to compete successfully as exports exceed imports, which resulted in a positive trade balance.

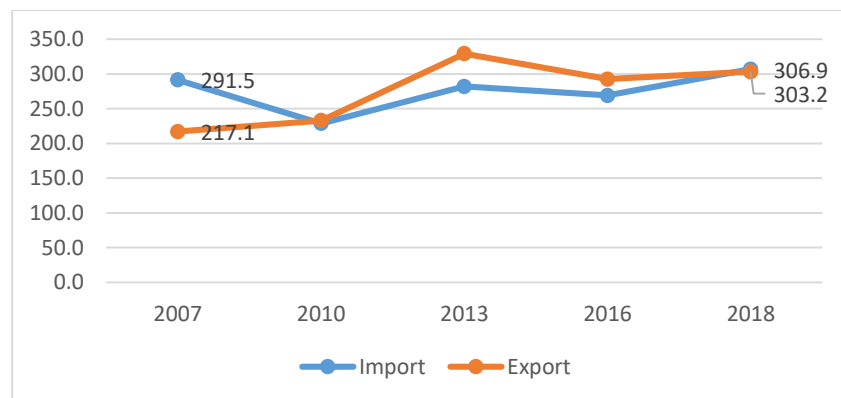


Figure 3. Dynamics of import and export of forest products in million BGN. Source: FAOSTAT

www.fao.org

Impact of CAP and state support for achieving competitiveness of the forest sector. Sustainable forestry over the years of pre-accession period is financed by government payments from the budget and the use of pre-accession funds. Figure 4 shows a dynamic financial assistance from the state of conservation, development and restoration of forests in the country. In the pre-accession period 2001-2007, Bulgarian state provides financial support for development of forestry in the amount of 202.29 million BGN (2001), which increased and reached 594.5 million BGN in 2006 from the accession of Bulgaria to the EU state support for development of the forestry sector starts fell sharply and reaches its minimum of 299.24 million BGN.

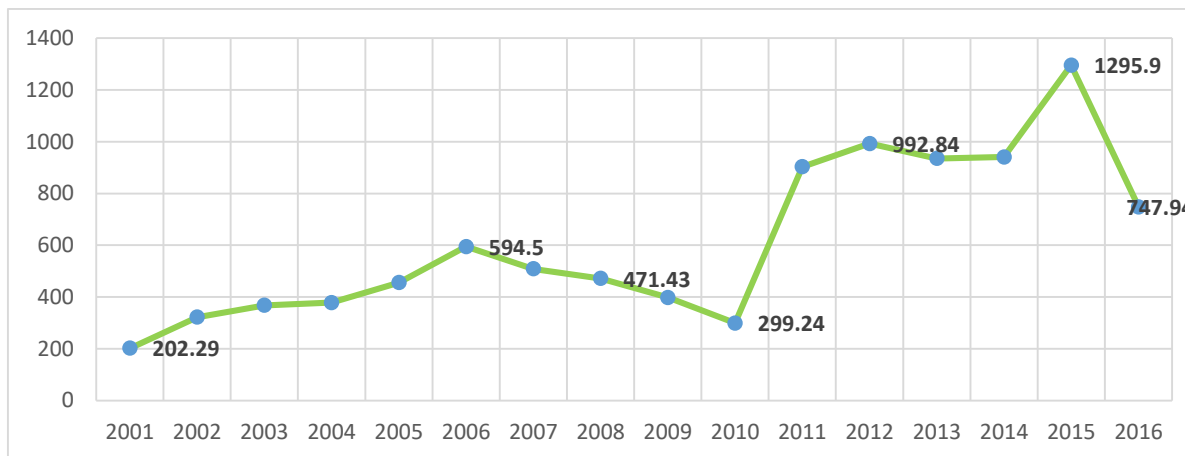


Figure 4. State support for development of the forestry sector million BGN Source: FAOSTAT
www.fao.org

Agricultural Fund for Rural Development (EAFRD) for sustainable forestry as national payments gradually began to decline. In the period 2011 - 2015 state support sharply increased and reached its peak of 1295.9 million BGN in 2015. In this period began the accelerated utilization of financial assistance provided under the RDP 2007-2013 and RDP 2014 -2020 and an increase in national payments provided for the sector. As a result of the support provided through the financial mechanisms of the CAP and state payments over the past 10 years have seen a sharp increase in production (2.3 times) and exports (1.4 times).

Financial mechanisms to support forestry covered by the CAP as well as those included in the state direct sectoral support have a multiplier effect and cause secondary effects in other (related) sectors (bank loans, tourism, agriculture, renewable energy, construction, education, etc.). One of the important sectors for sustainable development of the forestry sector is the bank sector. Implementation of projects for sustainable forest management and forestry co-financing by the developer (private or public), which co-affects demand for loans. The banking sector is a major provider of loans for development of forestry in the country. For the period 2000 – 2018, lending to the sector increased nearly 20-times (see Fig. 5). The findings increase in state support - 6.4 times (compared to 2000) led to this secondary effect in the credit sector. Loans for forestry in 2000 were 106.3 million BGN as their size increased dramatically and reached 2 158.73 million BGN in 2018

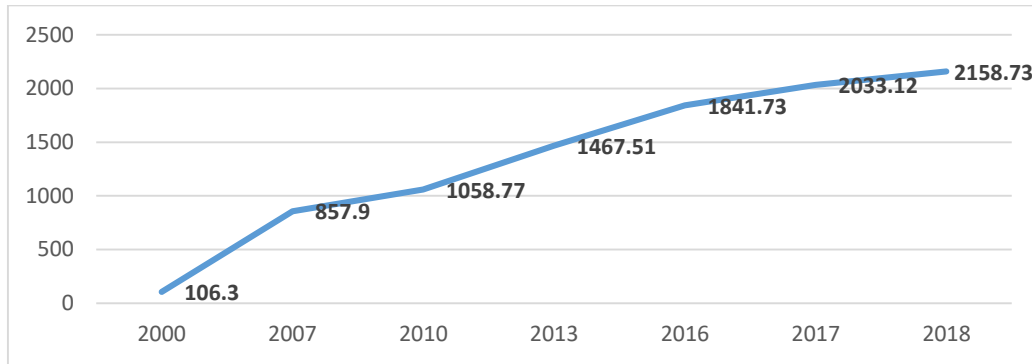


Figure 5. Loans in the forestry sector (million BGN). Source: FAOSTAT www.fao.org

Another important multiplier effect of the financial support under the CAP on the sustainable development of the forestry sector is the amount of attracted foreign investments. In the period 2000 - 2016 is seen sharp fluctuations in foreign direct investment in the forestry sector in Bulgaria. At the time of accession to the EU, namely in 2008 was seen exceptional peak attracted foreign investment at this time they reach 64.6 million BGN (see Fig. 6) Explanation for this could be sought that country us as a new member of the EU is an interesting and attractive investment destination. A year later began a drastic decline in FDI attracted by their minimum is reached in 2010 - 3.3 million BGN. This is explained by the current global economic situation then, namely the financial crisis in 2007 in the US, which later extends to the rest of the world. In the period 2010 - 2016 is stabilized and there was sluggish rise in foreign direct investment in the forestry sector in 2016 they had dropped to 8.1 million BGN (level much lower than reported in 2000)

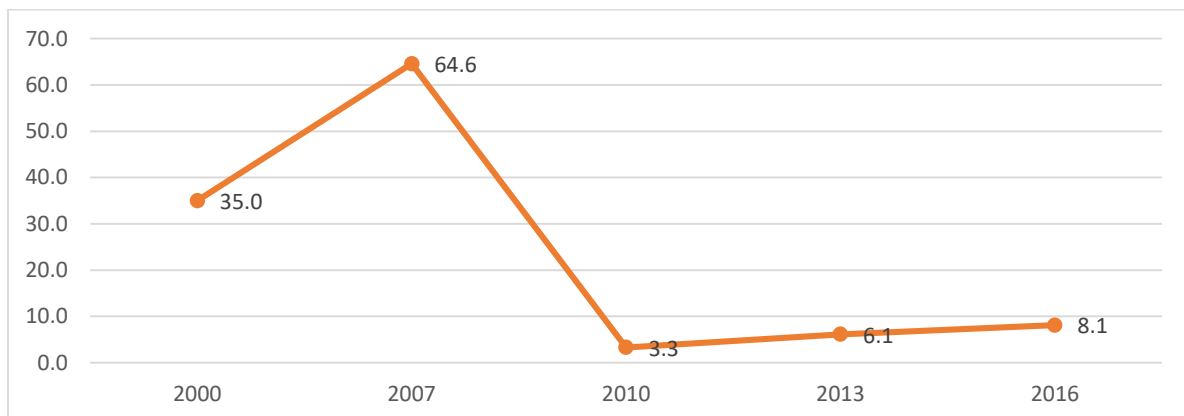


Figure 6. Foreign direct investments in the forestry sector million BGN. Source:FAOSTAT www.fao.org

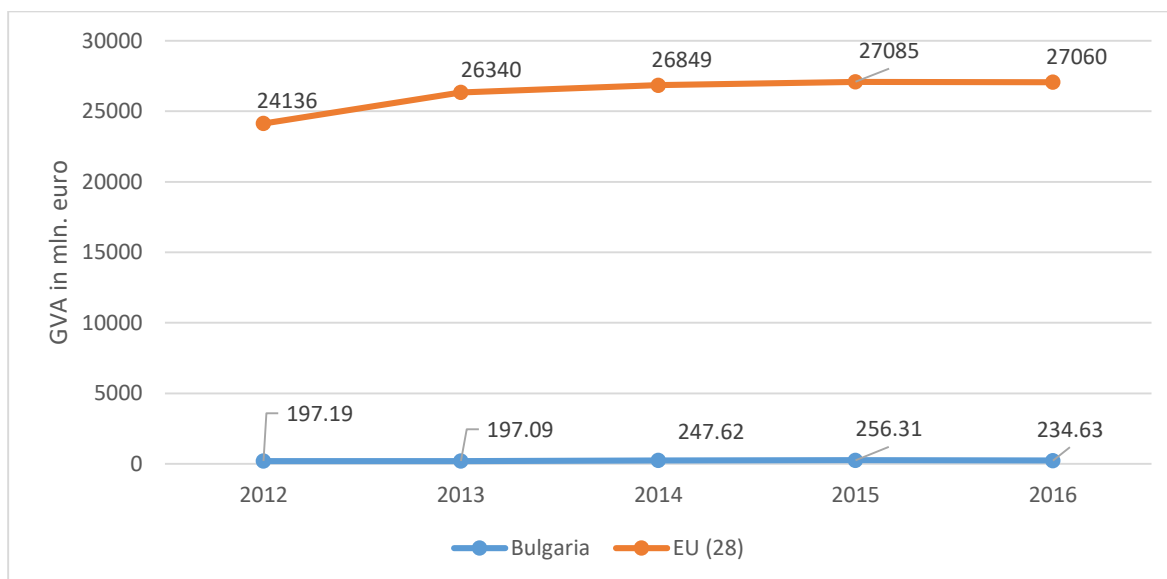


Figure 7. Gross added value generated by the forestry industry. Source: EUROSTAT, 2012-2016
<https://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tag00058>

The increase in state support and lending in the forestry sector leading to an increase in gross value added (GVA). In 2012 the gross value added in the sector amounted to 197.19 mln. euro (See Fig. 7). In recent years, GVA is growing and reached its peak in 2015 - 256.31 mln. euro, which is almost 1.3 times the levels recorded in 2012. The growth of GVA as production and exports show that the CAP favorably affects the competitiveness of the forest sector. The growth rate of GVA Bulgarian forestry follows the positive growth rate of GVA at EU level (28). At the time of accession of Bulgaria to the EU state forestry is low-input and low competitiveness. The production process at the farm realized in extreme weather conditions - low productivity of applied technologies of production (they are obsolete and natural resource), obsolete equipment for mining, haulage and transport of wood, low level of education and training of employed workers, underdeveloped road and utility infrastructure. In this business environment, forestry Bulgaria faces new challenges of the pan-European market. Bulgarian forestry businesses face higher competitiveness of Western companies that have innovative technologies. The entry of our country into the EU requires restructuring the export of products produced by the sector. Began changing the existing traditional country trade partners due to the imposition of duties and other customs restrictions. The restructuring of export proceeds at a time when the global economy is "vortices" financial crisis. All this requires the state to take action on strategirane its support for promoting the competitiveness of the forest sector. In recent years, started the process of preparing and implementing specific strategic program with the participation of stakeholders to create opportunities for improving the overall economic situation and the competitiveness of forestry.

At the time of accession of Bulgaria to the EU, forest road network in the country is relatively underdeveloped. According to the expert assessment of the World Bank, carried out in 2003-2007 year in forest areas there are about 28 000 km of roads. Of these, about 10,000 km are paved with gravel or asphalt coating and about 18,000 km are unpaved. Owned by state forestry enterprises (SFE) and state hunting (SH) are nearly 18,000 kilometers, and Republican and other property - about 10 000 km.

To date, according to data from the EFA average density of forest road network is 7.9 m/ha. It is comparable to that in Romania - 6.5 m/ha, but is significantly lower than other European countries, characterized by high brilliance of forests Austria - 36 /ha, France - 26 m/ha, Germany - 45 m/ha and Switzerland - 40 m/ha. Evidence suggests that although access to financial assistance road infrastructure is currently underdeveloped and not in very good condition. Over the past 10 years, mainly due to financial constraints, hardly builds new roads, maintenance or reconstruction of existing insufficient. Of the total forest roads, 75% are not suitable for movement of modern means of transport timber. As a result of the depreciation of the forest road network increases the proportion of unusable or difficult access to technology during certain times of the year forest roads (data EFA). This directly extended activities and costs in the supply chain of wood and reduces the competitiveness of the forest sector. Forest underdeveloped infrastructure and poor condition of forest roads create prerequisites for excessive use of wood in certain forest areas and difficult mastering forest fires. In addition, traditional practices on construction of forest roads are lagging behind in comparison to other European countries that aim to mitigate the potential environmental violations resulting from the design and construction of forest roads.

Clarifying the actual state of roads in forest areas and prospects of forest road network is one of the important activities that the state should take to improve the competitiveness of the sector.

Overall, companies from the forestry industry have overcome the crisis of 2009 - 2010, and has seen an increase in production, it reached its peak in 2016 years. The industry can be assessed as promising to the availability of sufficient raw material resources, sustainable internal and external market positions of the products and its importance as a source of income and employment for a significant portion of the population in mountain and rural areas.

At this point, according to the National Strategy for development of the forestry sector in the Republic of Bulgaria for the period 2013 - 2020 years the main issues related to enhancing the competitiveness of the forest sector are: 1) low labor productivity; 2) the lack of skilled labor; 3) lack of opportunities for the use of funds from the EU structural funds to invest in the renewal of equipment in forestry, plant production lines and transport of forest products; 4) insufficient participation (support) by banks in investment projects in the sector; 5) low share of certified forest areas and certified forestry contractors. All this limits the access of products and articles of the forestry sector to foreign markets. According to the National Strategy critical factor limiting the competitiveness of the forest sector is the lack of labour. Measures that can be taken to tackle this problem could be the following: 1) hiring new workers to maintain the necessary capacity in use, restoration and protection of forest resources and territories in number and higher competence and 2) raise the social status of forest workers by raising wages and providing more attractive working conditions in the forestry sector, especially in logging.

One way to increase the viability and profitability of forestry is by creating opportunities for diversification of production, namely the development of hunting, recreation, energy production from forest tree biomass and others. Thus forestry can add value to manufactured goods and to diversify sources of revenue in their financial management. The state's role is to assess the capacity of forest ecosystems for the production of biomass as a renewable energy source and the development of hunting tourism. At present there is already a National Action Plan for energy from forest biomass 2018-2027 and Strategy for Development of hunting in Bulgaria for the period 2012-2027.

Achieving innovative and competitive forest sector requires spending for research and development (R&D) as well as promoting technology transfer from nauchno-educational organizations to forestry. The major source of R&D funding is the state budget, 98% of R&D in the sector every year are made by the State (according to the National Statistics Institute). Still missing private enterprises to conduct R&D in the sector. At the present moment the contribution of science to the development of the forestry sector is insufficient due to lower costs for research and development (R&D), innovation and development with practical effect. The relationship between science and forestry business, innovation and technology transfer in the forestry sector are poorly developed.

Impact of CAP on developing social factor in the forestry sector. The favorable natural conditions and traditions in forestry and forest industry in case of internal and external markets for forest products and services are a prerequisite for development activities ensuring income from sales of timber and non-timber forest products, providing ecosystem services and biomass production. Although the forest sector to form a relatively small share of gross domestic product, forestry and forest industry as a traditional livelihood are particularly important for rural development in Bulgaria and improving the quality of life. Achieving sustainable forestry requires investment in the sector, aimed at efficient use of the social factor in achieving sustainable development. Forestry is one of the main and the only sector in some regions of Bulgaria, which provides an opportunity for employment and wage income. The number of employed in the sector is given in Figure 8. The data show that there has been a spike in the number of people employed in forestry in the country over the past 10 years. In 2009 the number of employed was 22.8 thousand people like peak in the number of employees was achieved in 2017 - 32.5 thousand people. There is a sharp fluctuation in the number of employees on an annual basis after year to increase the number of employees, immediately following year with a sharp drop in this indicator. This proves the impact of the CAP on the number of employees in the sector is hesitant and mixed by force. It can be concluded that the CAP does not create lasting trends preserve and increase the number of people employed in forestry. Causes fluctuation in the number of employees can be found in labor migration of the population; in unattractive working conditions that the sector offers and low levels of profitability that forestry achieved in comparison with other economic sectors. Very often the forest is a source of labor for related industries which offer attractive working conditions and pay. in unattractive working conditions that the sector offers and low levels of profitability that forestry achieved in comparison with other economic sectors. Very often the forest is a source of labor for related industries which offer attractive working conditions and pay. in unattractive working conditions that the sector offers and low levels of profitability that forestry achieved in comparison with other economic sectors. Very often the forest is a source of labor for related industries which offer attractive working conditions and pay.

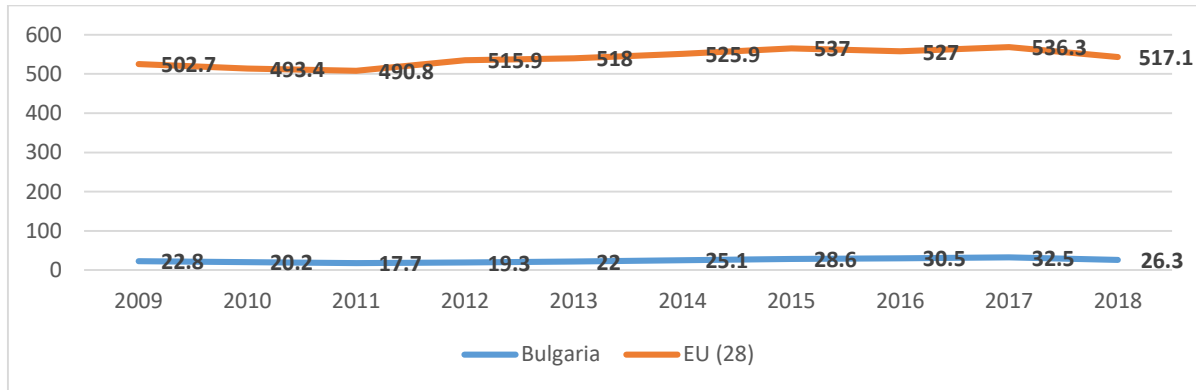


Figure 8. Number of employed in forestry - thousand people. Source: EUROSTAT, www.eurostat.eu

One of the important determinants of employment in the forest sector is the ability to realize the profitability of doing business. Net income, which is implemented in forestry over the years slightly increases - in 2013, net income per one holding amounted to 17 580 BGN and in 2016 reached 17 820 BGN (see Fig. 9). Compared to other economic sub-sectors (such as agriculture and rural tourism), using natural resources, forestry offers the lowest yield. This proved outflow of entrepreneurial factor in the sector. It should be noted that state enterprises dominate in forest management.

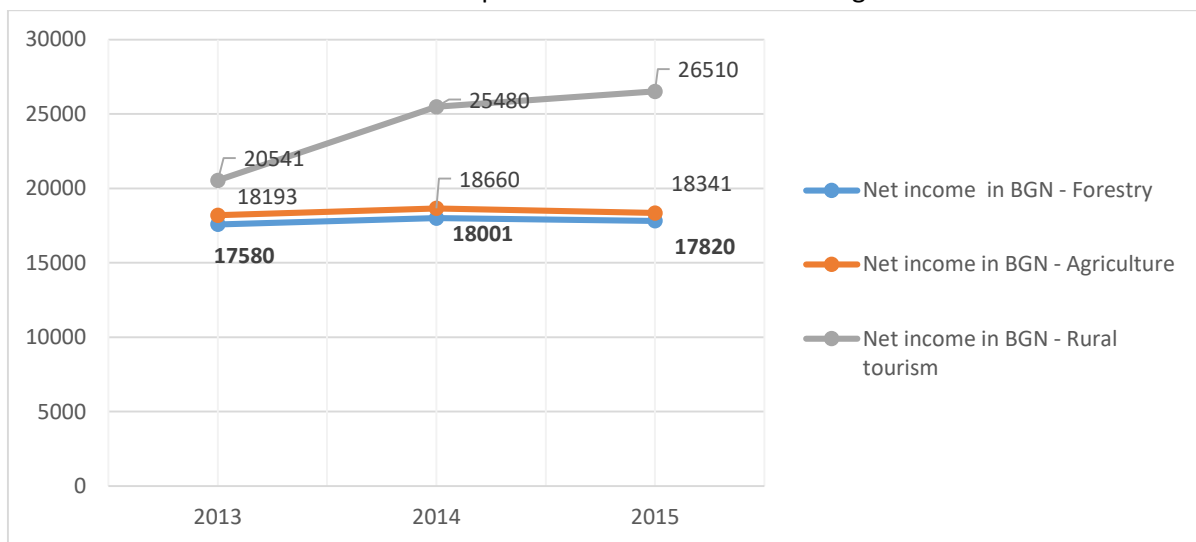


Figure 9. Net income in sectors that compete in the use of natural resources (in BGN per one farm). Source: data from the accounting system of agricultural information EUROSTAT - www.eurostat.eu and own calculations.

Conclusions

At present, Bulgaria has a significant forest resource - forest areas occupy more than a third of the country. Share of forests of the land used in Bulgaria increased in the last 10 years from 30.51% to 33.93%. The positive trend of growth of forests in Bulgaria coincides with the positive growth trend of this indicator at EU level. The growth rate of forests in Bulgaria abandons an annual average of 3% compared to the EU, further efforts are needed to develop the forestry sector to catch up with the EU average.

Financial mechanisms to support forestry covered by the CAP as well as those included in the state direct sectoral support have a multiplier effect and cause secondary effects in other (related) sectors (credit, agriculture, renewable energy, tourism and construction). For the period 2000 - 2018 lending to the forestry sector increased nearly 20 times. The findings increase state support amounting to 6.4 times this leads to a secondary effect in the bank sector. There is a subdued rise in foreign direct investment in the forestry sector in 2016 they had dropped to 8.1 million BGN (level much lower than reported in 2000). GVA is growing and reached its peak in 2015 - 256.31 mln. euro, which is almost 1.3 times from levels in 2012.

Traditionally applied practices for building forest roads are lagging behind in comparison to other European countries that aim to mitigate the potential environmental violations resulting from the design and construction of forest roads.

Clarifying the actual state of roads in forest areas and prospects of forest road network is one of the important activities that the state should take to improve the competitiveness of the sector.

Overall, companies from the forestry industry have overcome the crisis of 2009 - 2010, and has seen an increase in production, it reached its peak in 2016 The industry can be assessed as promising to the availability of sufficient raw material resources, sustainable internal and external market positions of manufactured products.

At the present moment the contribution of science to the development of the forestry sector is insufficient due to lower costs for research and development (R & D), innovation and development with practical effect. The relationship between science and forestry business, innovation and technology transfer in the forestry sector are poorly developed. As key issues emerge expansion of direct cooperation between research organizations and enterprises and increasing the share of private R&D funding.

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