ACTION PLAN FOR SUPPORTING EXPORT OF THE HIGH ADDED VALUE PRODUCTS OF THE SERBIAN WOOD INDUSTRY

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Contents

Summary

Serbian wood industry represents an industry with a series of comparative advantages compared to other industries with special emphasis on the local raw material base on the potential of which its production is based. By the end of 2014 there were 2,540 active companies within the Serbian wood industry out of which 1,786 were dealing with wood processing and 754 companies were producing furniture. If you add to that number the 1,593 active entrepreneurs then the number of active economic entities in the Serbian wood industry amounted to 4,133 by the end of 2014.

The total number of people employed in the Serbian wood industry at the beginning of 2015 was 22,711 out of which 9,234 in wood processing companies and 11,717 in furniture production. Within the registered entrepreneurs category there were 1,760 employees. In 2014 it accounted for 1.72% of the total number of employees i.e. 8.13% in the processing industry of Serbia. According to this parameter, the wood industry was ranked at third place right behind the food production (49,727 workers) and production of metal products (28,437 workers).

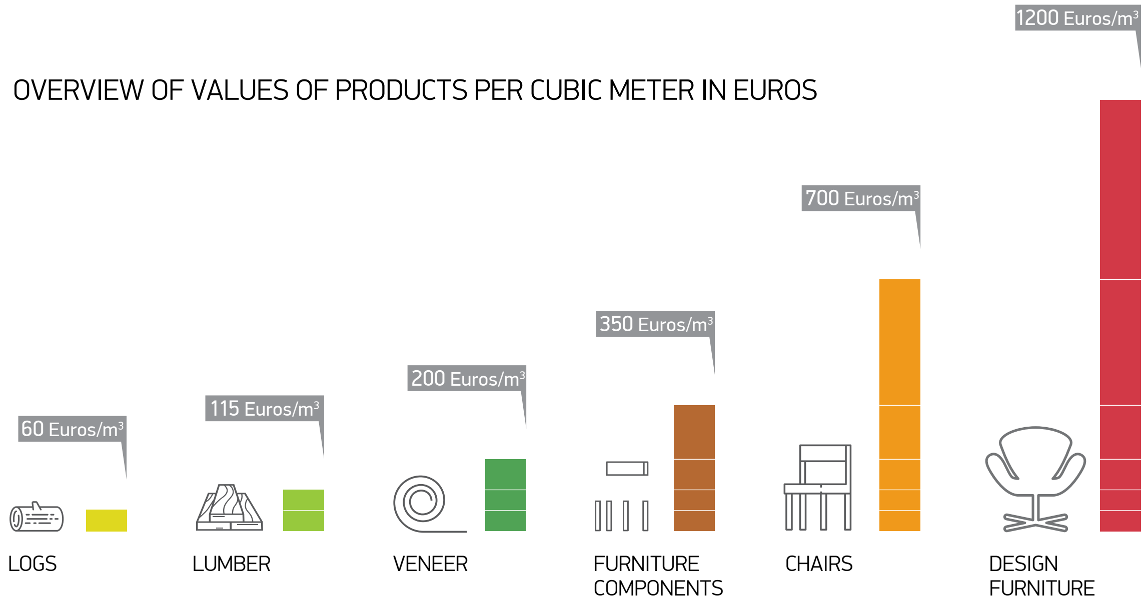
The results the wood industry achieved in 2014 show that its share in the gross domestic product of Serbia was 1.55%. With export worth USD 363.7 million the wood industry's share in the total Serbian export was 2.72%. Wood processing export structure is dominated by products with lower added value. The share of floors and construction joinery as high added value products in 2015 was merely 26% compared to the total export of processed wood while the products with lower added value accounted for 74%. The furniture export was dominated by sitting furniture with the 31% share in the total value of wood furniture export (USD 161 million).

Analyses and calculations for the flow of wood and wood products in Serbia for 2015 showed that only 48% of the total produced amount of deciduous hardware-processed into high added value products and 52% are exported as low added value products: export of logs (4%), export of lumber (41%) and export of other low added value products. That is why the value of wood products export per employee is relatively low. In 2014 it amounted to 18,291 USD/worker and was considerably lower compared to Croatia and Bosnia and Herzegovina. Compared to developed EU countries this indicator is several times lower. With such a small quantity of wood raw material that is being finalized, at this moment Serbia cannot be seen as a serious supplier of European or global market with high added value products.

The competitiveness analyses of the current wood products exported from Serbia to certain markets show that the value of their export is symbolic compared to the overall turnover of these products at the selected markets. In order to change that, one of the conditions is to increase the degree of finalization of wood raw material available in Serbia.

The aim of supporting this industry is to encourage its export competitiveness in order to position Serbia at the world map of manufacturers, primarily of wood furniture but also other products with high added value. That would increase the employment but also significantly decrease the development delay of rural areas in Serbia that are richly covered by forests. In order for the wood industry to become one of the key drivers of sustainable economic development in Serbia it is necessary to increase the efficiency in the use of its resources as well as the share of products with high added value in the total production.

OVERVIEW OF VALUES OF PRODUCTS PER CUBIC METER IN EUROS



In 2015 the export of deciduous lumber from Serbia was 145,000 m3 with the realized value of EUR 45.3 million. If this quantity of lumber is to be finalized in Serbia into chairs alone, we would get around 5 million pieces of chairs the export value of which could reach around EUR 265 million or 5.8 times more compared to the actual value of lumber as semi-product. Furthermore, the processing of this quantity of lumber into chairs would generate at least 5.000 new jobs. From the stated example it is clear what effects could be achieved by increasing the degree of finalization of the wood raw materials.

The measures proposed in this strategic document are systematized in two sections. One defines the guidelines and methodology for improvement of internal capacities of manufacturers of wood products with high added values so that they are more competitive on foreign markets and the other one defines the measures for improvement of the overall business environment at all government levels.

The aim of the proposed measures for improvement of the manufacturers' internal capacities in this industry is to improve their professional competencies in the area of business management, export and access to buyers at domestic and export markets.

The measures for improvement of the overall business environment at all government levels are divided into 4 groups:

- contribution to increasing the degree of finalization of the raw material and change of the existing spatial distribution of production in accordance with the level of forest cover within certain regions;
- stimulation of export-oriented production of wood products with the highest degree of finalization by strengthening production capacities, technological improvements and provision of technical and expert support to companies in this area;

- improvement of tertiary education, secondary vocational education and vocational training in line with the industry needs and
- promotion of Serbia as a country that is exporting solid wood furniture and other wood products with a high added value.

Through successful implementation of the proposed measures within the stated groups, the Serbian wood industry would have a big opportunity to position itself as an industry that can quickly generate the greatest number of new jobs in Serbia (estimated additional 10.000 -12.000 by 2022). On the other hand, successful implementation of those measures will contribute to additional growth of export exceeding USD 500 million on an annual level thus significantly decreasing the country's foreign trade deficit.

On the other hand, the potential failure to implement these measures could affect the Serbian wood industry so it could lose its chance to strengthen its competitive positions in the long-run. In that way, Serbia would be turned into a raw material base for strong global and regional wood industry companies from other countries. Therefore, every participant in the implementation of the proposed measures should give his maximum contribution. That is his national duty and obligation.

Introduction

Serbian wood industry together with agriculture, metal industry, automobile industry and tourism should become the main pillar of Serbian development. In the last twenty years it had positive results according to criteria related to the number of companies, employment growth, realized business revenue, export and positive foreign-trade balance. However, this industry still hasn't used all of its potential nor achieved results expected of it.

In the global context, China has been the world's greatest supplier and exporter of furniture for almost two decades.[1] According to the analyses of the world trends on the final wood product market, around 50% of total furniture sold across the world every year is made in China. At the European wood furniture market China's share is around 10%.[2] It is quite possible that in the future China's share of the European market will decrease due to the combined effect of several foreign-trade factors. Firstly, China is becoming expensive for organizing furniture production due to the increasing labour costs. Secondly, China is of late withdrawing from the position of dominant world exporter and is establishing its economic growth on local sales of products for the growing well-off middle class of local population. The recent statements of Chinese officials are confirming this new economic policy of China that is increasingly oriented towards production for their own wide, healthy and growing local market instead of global consumers. And thirdly, as all foreign-trade transactions with China take place in dollars, the price of goods made in China has significantly increased primarily for European buyers due to the currently very unfavourable EUR-USD ratio.

All this means that European buyers and big commercial chains must quickly find new suppliers from European countries like Serbia, provided of course that the price and quality of products from the potential new suppliers are competitive. The most important issue at this point is whether the price and quality of wood produced or wood that will be produced in the future in Serbia may fulfil the competitiveness requirements. Availability and quality of raw material base provide the first and basic market advantage for the local furniture producers. Of course, the good quality raw material base is essential but not sufficient. Furniture producers should provide other elements of importance for raising competitiveness such as business skills like design, marketing, pricing policy, professional labour and strengthening managerial capacity. This will improve all aspects of production of local furniture producers and open the doors of global markets.

These facts contributed to raising the initiative of the local self-governments, leading companies in wood processing sector, government institutions, Serbian Chamber of Commerce and Industry and educational institutions, supported by the United States Agency for International Development (USAID) and European PROGRES in order to create conditions for increasing the degree of utilizing the existing potential of this industry and to position Serbia as a global supplier of products with high added value. This initiative resulted in drafting the National Action Plan for Supporting Export of the High Added Value Products of the Serbian Wood Industry.

1 X. Han, Y. Wen, S. Kant: *The global competitiveness of the Chinese wooden industry*, Forest Policy and Economics (11), 2009, 561-569.

2 EU DG Enterprise and Industry: *The EU furniture market situation and a possible furniture products initiative*, Brussels, November 2014

Goal and purpose of development of the action plan

The main goal of developing the Action Plan is the identification of potentials of wood industry in Serbia and to propose measures to increase competitiveness and accelerated development.

The purpose of the Action Plan is to road map for creating conditions for the positioning of Serbia as a global supplier of wood products with high added value.

Serbian wood industry today: Overview of the situation

Serbian wood industry represents an industry with a series of comparative advantages compared to other industries, with special emphasis on the local raw material base on the potential of which its production is based.

of companies in the furniture production segment are producing other furniture (419), office furniture (199) and kitchen furniture (106) (Graph 2).

Krajem 2014.godine u drvnoj industriji Srbije bilo je aktivno 2.540 privrednih društava, od čega se preradom drveta bavilo 1.786, a proizvodnjom nameštaja 754 privrednih društava (grafikon 1).

Ovom broju privrednih društava potrebno je dodati i 1.593 aktivna preduzetnika tako da je ukupan broj aktivnih privrednih subjekata u drvnoj industriji Srbije krajem 2014. godine iznosio 4.133.

Graph 1. Trends concerning the number of active companies in the Serbian wood industry in the period 2007-2014[3]

By the end of 2014 there were 2,540 active companies within the Serbian wood industry out of which 1,786 were dealing with wood processing and 754 companies were producing furniture (Graph 1).

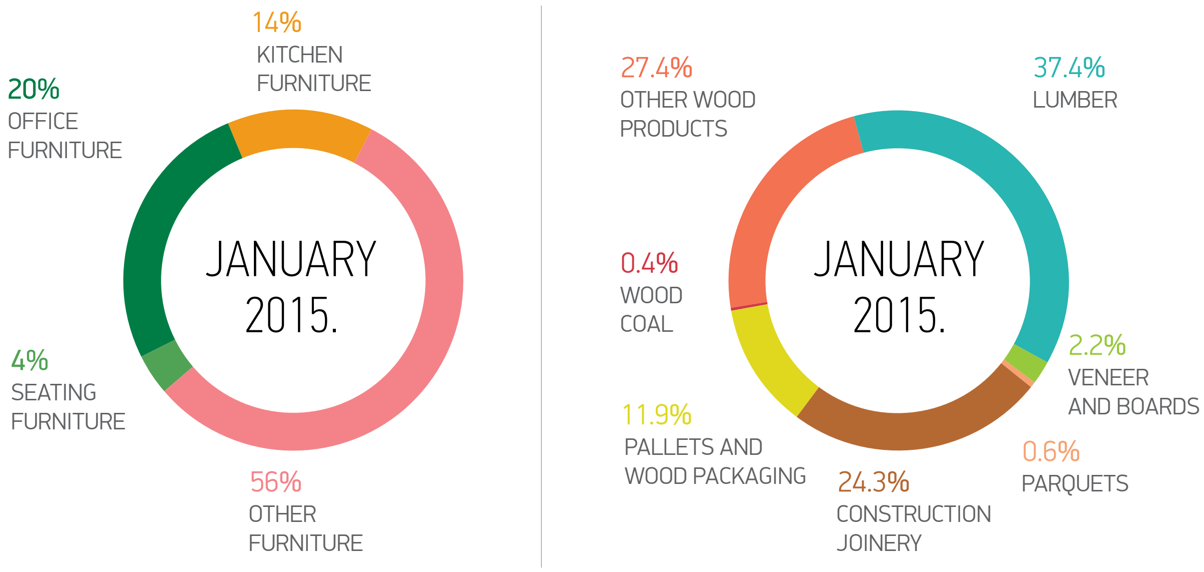
One should add to that number the 1,593 active entrepreneurs so the number of active economic entities in the Serbian wood industry amounted to 4,133 by the end of 2014.

The greatest number of wood processing companies are producing lumber (668) and then come the companies that produce construction joinery (434) and other wood products (415). The biggest number

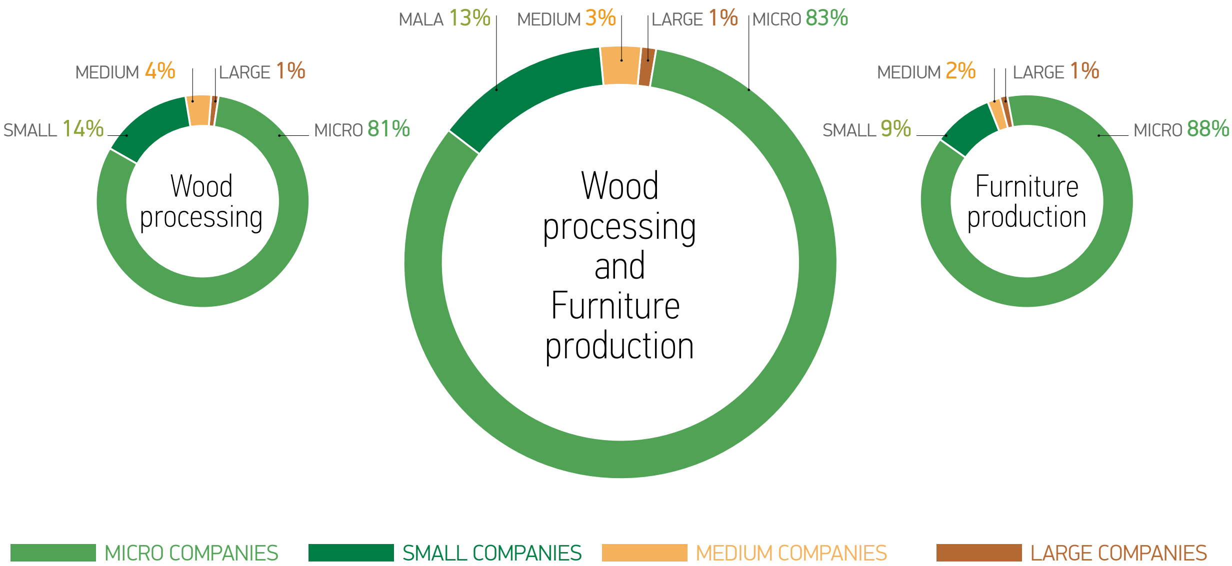
According to size, the biggest category of companies in wood processing and furniture production are micro and small enterprises (Graph 3).

The share of medium and large enterprises is very small; in wood processing it is 5% and in furniture production only 3%. Such company structure is relatively unfavourable from the point of view of export competitiveness and their positions on the main export markets.

3 Sources: Serbian Business Registers Agency and Centre for Wood Industry Marketing and Economics, Faculty of Forestry, Belgrade



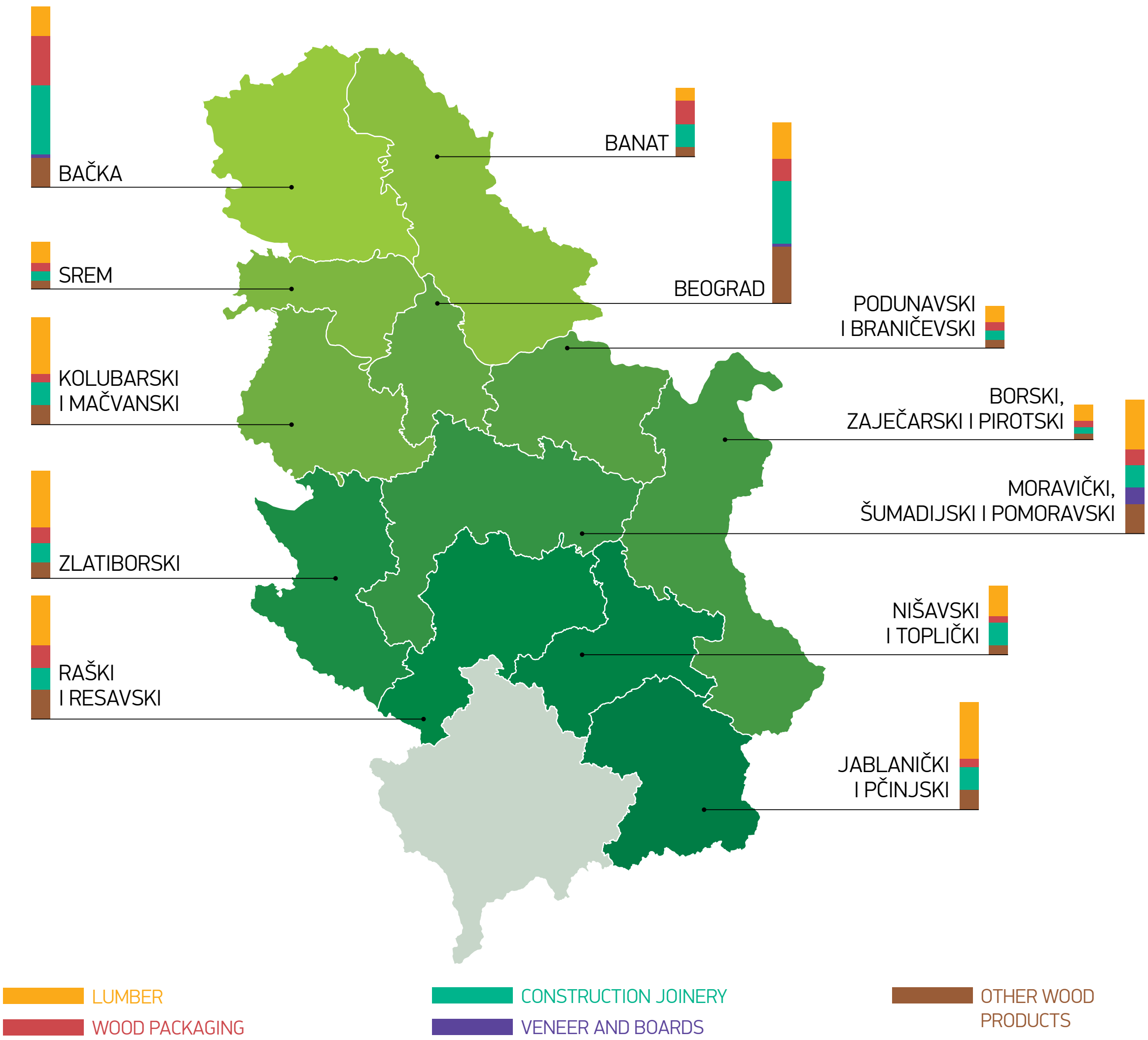
Graph 2. Share of companies by types of production in the total number of companies in the Serbian wood industry[4]



Graph 3. Structure of companies in Serbian wood industry by size[5]

4 Sources: Serbian Business Registers Agency and Centre for Wood Industry Marketing and Economics, Faculty of Forestry, Belgrade

5 Source: Vasiljević A.,"The Impact of Wood Market on Socio-Economic Component of Sustainable Development of Wood Sector in Serbia", PhD thesis, University of Belgrade, Faculty of Forestry, 2015



Najveći broj registrovanih privrednih društava nalazi se u regionima sa najmanjom šumovitošću (mapa 1). Upoređujući ukupan godišnji prirast sa brojem privrednih društava za proizvodnju rezane građe, dolazi se do zaključka da su u nekim regionima, pre svih Bačka i grad Beograd, instalirani kapaciteti za koje je u visokom procentu sirovinu neophodno obezbediti dovoženjem sa strane sa udaljenošću i preko 300 km. U drugim regionima, kao što su Borski, Zaječarski i Pirotski okrug, broj privrednih društava koja se bave preradom tehničke oblovine izuzetno je mali. Na području ova tri okruga Nacionalnom inventurom šuma zabeležen je godišnji prirast u visini od 16% ukupnog prirasta Srbije. Na drugoj strani, u ovom području broj registrovanih privrednih društava iz oblasti prerade drveta je svega 2,5% u odnosu na ukupan broj ovih privrednih društava u Srbiji.

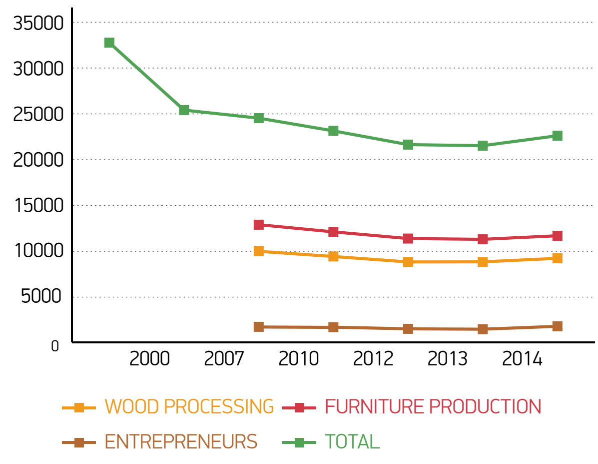
Map 1. Territorial distribution of wood processing companies in Serbia[6]

6 Sources: Serbian Business Registers Agency and Centre for Wood Industry Marketing and Economics, Faculty of Forestry, Belgrade

Data analysis concerning the number of companies with regards to their activity and spatial distribution shows that the total number of companies dealing with primary wood processing is very big and there is a **significant discrepancy between their capacity and distribution and the production capacity of forests.** In other words, the biggest number of registered companies are located in the region with the lowest forest coverage (Map 1). By comparing the total annual increment with the number of companies for production of lumber, it may be concluded that in some regions, primarily Backa and the city of Belgrade, there are installed capacities for which the high percentage of raw materials must be provided by transportation from the distance of over 300 km. In other regions, like the districts of Bor, Zajecar and Pirot, there are very few companies for processing technical logs (round wood). On the territory of these three districts, the National Forest Inventory recorded the annual increment of 16% of the total increment of Serbia. On the other hand, the number of registered companies in this area related to wood processing is merely 2.5% of the total number of these companies in Serbia.

Total number of employees in the Serbian wood industry at the beginning of 2015 was 22,711 out of which 9,234 in wood processing companies and 11,717 in furniture production companies. There are 1,760 workers in the category of registered entrepreneurs (Graph4).There were 12,199 workers employed in companies and entrepreneurial shops dealing with furniture production or 53.7% of the total number of employees in the Serbian wood industry.

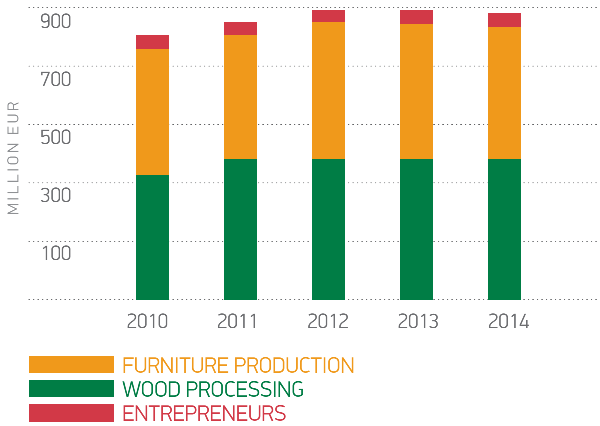
By comparing data on the total number of employees in 2014 and the period prior to 2000 one may conclude that the number of employees in 2004 was in decline by 10,226. That is the result of shutting down a great number of socially owned enter-



Upoređujući podatke o ukupnom broju zaposlenih radnika u 2014. godini i u periodu pre 2000. godine može se zaključiti da je broj radnika u 2014. godini bio manji za 10.226. To je posledica propadanja velikog broja društvenih privrednih društava u kojima je 2000. godine bilo zaposleno 32.937 radnika. S druge strane to pokazuje da se sa postojećim potencijalima u šumarstvu, sa kojima raspolaže Republika Srbija, može ostvariti dodatno zapošljavanje u segmentu prerade drveta i povećati učešće drvne industrije u ukupnom broju zaposlenih u Srbiji.

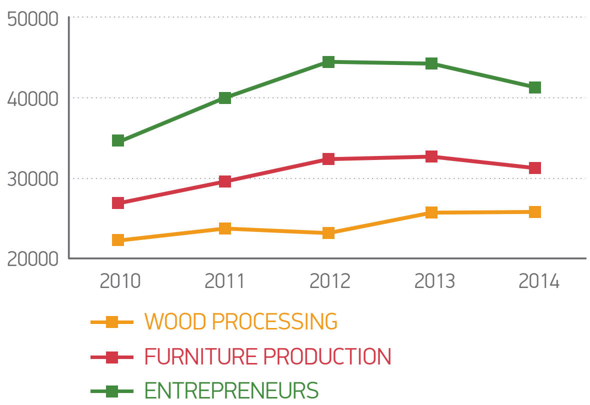
Graph 4. Trends concerning the number of employees in Serbian wood industry [7]

7 Sources: Serbian Business Registers Agency and Centre for Wood Industry Marketing and Economics, Faculty of Forestry, Belgrade



Ukupno ostvareni poslovni prihodi privrednih društava i preduzetnika u drvnoj industriji Srbije u 2014. godini iznosili su 787 miliona EUR i u odnosu na 2013. godinu bili su manji za 1,4% (grafikon 5). Iako je broj privednih društava, koja se bave proizvodnjom nameštaja manji za 2,3 puta u odnosu na broj privrednih društava koja se bave preradom drveta, njihovi ostvareni poslovni prihodi su skoro izjednačeni sa poslovnim prihodima privrednih društava u preradi drveta, što je još jedan pokazatelj u prilog proizvodnje proizvoda sa visokom dodatom vrednošću.

Graph 5.
Business revenue of companies and entrepreneurs in Serbian wood industry [8]



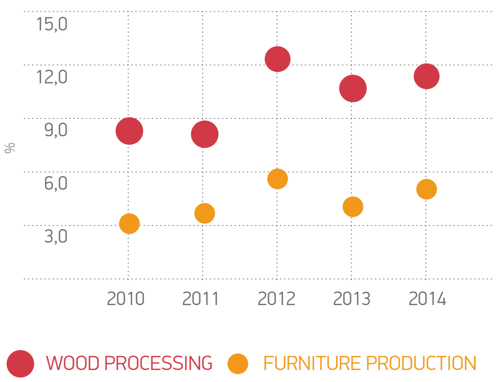
Ostvareni poslovni prihod po jednom zaposlenom radniku u 2014. godini, na nivou grane, iznosio je 34.648 EUR pri čemu u preradi drveta 41.295 EUR, u proizvodnji nameštaja 31.184 EUR, a u segmentu preduzetnika svega 25.697 EUR (grafikon 6). Po ovom pokazatelju drvna industrija Srbije značajno zaostaje u odnosu na razvijene zemlje EU, pa čak i u odnosu na Hrvatsku kao zemlju u regionu.

Graph 6. Realized business revenue per an employee in the Serbian wood industry

prises that hired 32,937 workers in 2000.

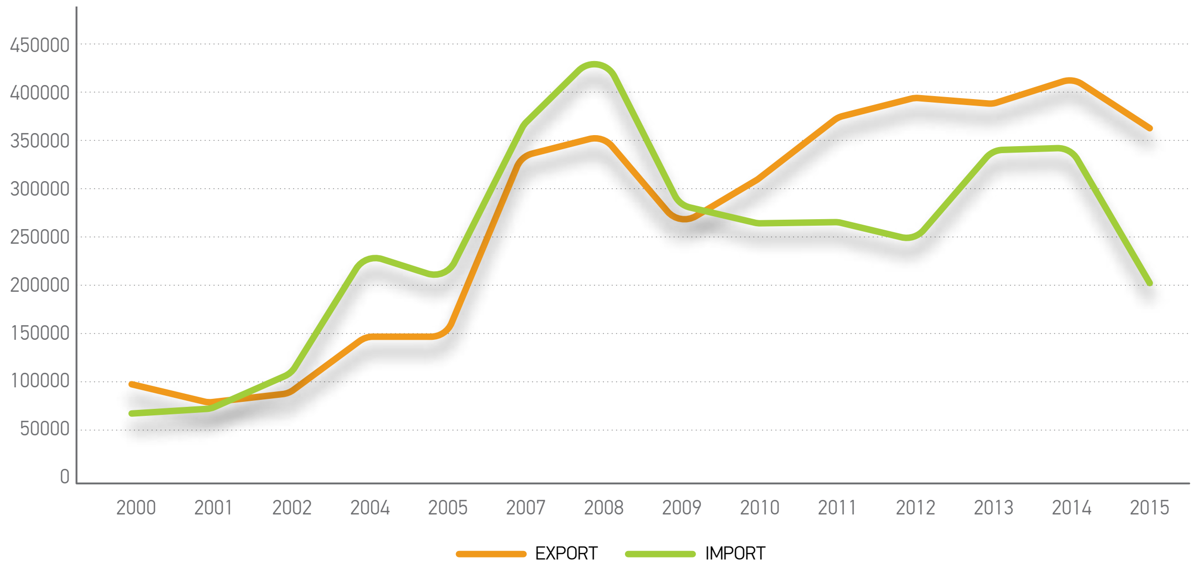
On the other hand, it shows that with the existing forestry potential available in the Republic of Serbia, there can be additional employment in the wood processing segment and increase of the share of wood industry in the total number of employees in Serbia. In 2004 its share was 1.72% of the total number of employees i.e. 8.13% of the processing industry of Serbia. According to this parameter, the wood industry was ranked at third place right after the food production (49,727 workers) and production of metal products (28,437 workers). With the exception of clothing production (21,711 workers)

8 Sources: Serbian Business Registers Agency and Centre for Wood Industry Marketing and Economics, Faculty of Forestry, Belgrade



Učešće neto dobiti u ukupnim poslovnim prihodima potvrđuje opšte poznatu činjenicu da je drvna industrija niskoakumulativna grana pa i iz tog razloga treba da bude predmet posebnih mera podrške Vlade i drugih kreatora ekonomske politike. Na grafikonu 7 predstavljeni su podaci o učešću neto dobiti u ukupnim poslovnim prihodima za preradu drveta i proizvodnju nameštaja u periodu 2010-2014. godina.

Graph 7. Share of net profit in the total business revenue for wood processing and furniture production in the period 2010-2014 [9]



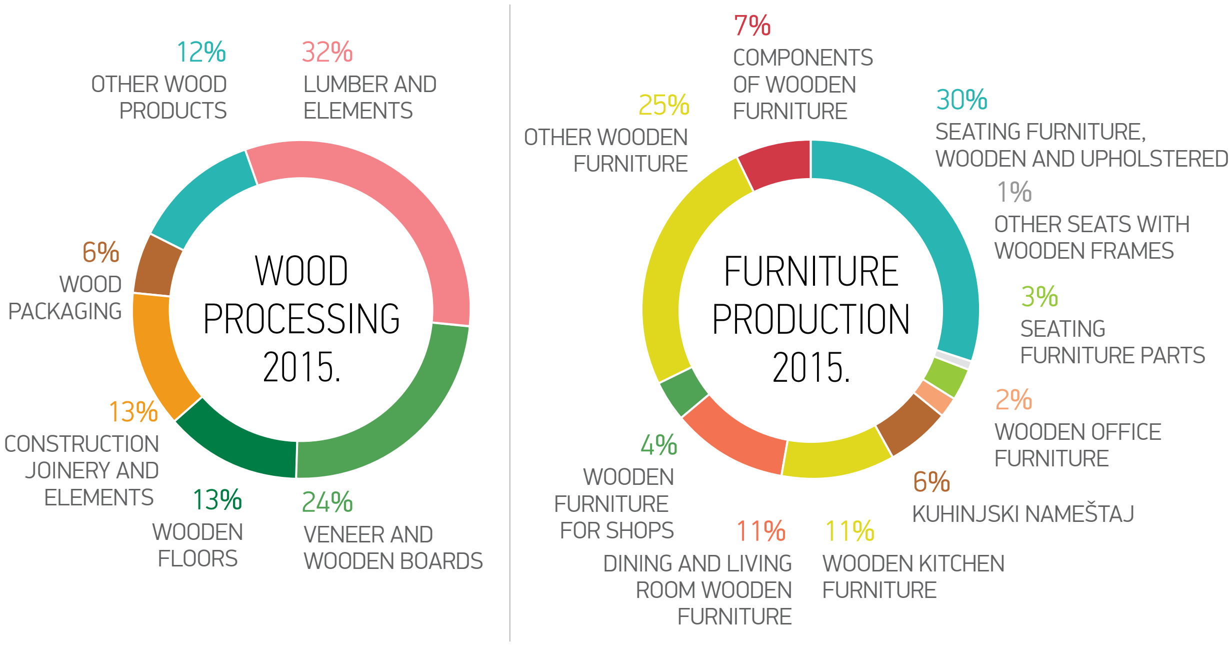
Graph 8. Export and import of Serbian wood industry in the period 2000-2015 [10]

and motor vehicle production (21,711 workers) other industries hired considerably less than 20,000 workers which shows that these five industries are of most importance for Serbia concerning the employment in industry (Sources: Glavonjic, B, 2016, SBRA and Statistical Yearbook for Serbia, 2015).

Analysis of data on the number of employees in wood processing companies shows that on the territory of the city of Belgrade that has the forest share of only 2.3% of the overall area under forests in Ser-

9 Source: Serbian Foreign Trade Statitstics, Statistical Office of the Republic of Serbia, Belgrade, 2016

10 Source: Serbian Foreign Trade Statitstics, Statistical Office of the Republic of Serbia, Belgrade, 2016



Graph 9. The share of certain product categories in the total export of wood processing and furniture production in Serbia [11]

bia, there are 37.1% of workers employed. Contrary to this, the region of South and East Serbia employs 13.6% of workers on the territory covering 46% of the total forest area of Serbia (Vasiljevic, A. 2015).

Low usage of local raw material and small number of companies for wood processing in certain areas directly result in the declining number of employees which further affects the depopulation. That is why wood processing in the regions richly covered by forests has a very important role from the socio-economic aspect.

Total realized business revenue of companies and entrepreneurs in Serbian wood industry amounted to EUR 787 million in 2014 and was by 1.4% lower compared to 2013 (Graph 5).

Although the number of furniture producing companies is 2.3 times smaller than the number of wood processing companies their actual business revenue is almost equal to the wood processing companies which is another indicator to support high added value products.

The realized business revenue per employee in 2014 at the industry level was EUR 34,648 whereof EUR 41,295 in wood processing, EUR 31,184 in furniture production, and only EUR 25,697 in the entrepreneurs segment (Graph 6). According to this indicator the Serbian wood industry considerably lags behind other developed EU countries, even Croatia as a country in the region.

Business revenue per an employee is much lower compared to the state average. The situation is similar with the amount of average salaries that

11 Source: Serbian Foreign Trade Statitstics, Statistical Office of the Republic of Serbia, Belgrade, 2016

are much lower compared to the state average in economy.

Actual results of wood industry in 2014 indicate that its share in the gross domestic product of Serbia was 1.55% which is much higher compared to the official statistical data. The reason lies in the fact that official statistics does not account for the business results of companies dealing with other activities besides wood processing in their calculations of domestic product of wood industry.

With regards to wood industry's contribution to public revenue of the Republic of Serbia, the data for 2014 indicated that it was over EUR 80 million just in the VAT segment. On the other hand, the appropriations from the budget for support to wood industry were symbolic.

The share of net profit in the total business revenue confirms the well-known fact that wood industry is a low accumulation branch, therefore it should be subject to special support of the Government and other economic policy creators. Graph 7 shows the data on the share of net profit in the total business revenue for wood processing and furniture production in the period 2010-2014.

Serbian wood industry's foreign trade balance has been positive for a number of years. Total surplus of wood industry was USD 159.9 million in 2015 (Graph 8). With export worth USD 363.7 million the wood industry accounted for 2.72% of the total Serbian export. On the other hand, the share of wood industry in the total import to Serbia was 1.12% in 2015.
The share of export in the total business revenue of wood processing in 2014 was 56% and in furniture production 38%. It is necessary to invest additional effort in order for the share of export in total business revenue to exceed 50% at the industry's level. Wood processing industry holds fifth place among 20 industries in Serbia with the achieved surplus in foreign trade balance for 2015 in the amount of 160 million USD. The wood processing export structure is dominated by products with lower added value. The share of floors and construction joinery as high added value products in 2015 was merely 26% compared to the total export of processed wood while the products with lower added value accounted for 74% (Graph 9).

The furniture export was dominated by sitting furniture with the 31% share in the total value of wood furniture export (USD 161 million). The most important markets for export of this furniture category are France, the Netherlands and Italy.

Methodology for Drafting the Action Plan

The concept used in drafting this Action Plan was based on implementing the bottom-up approach with highly participatory process of data collection and planning that ensured the participation of public and private sector, identified specific developmental restrictions for growth of the business volume in the area of wood furniture and enabled objective assessment of the sector needs and development potential. The leading role belonged to the local communities in areas rich in forest, in areas with an active wood processing sector and with help and support of the relevant state institutions and the Government. The planning process provided the participation of both public and private sector in order to improve the business capacity of the existing companies and create new, dynamic business entities. The official patron of the Action Plan is the board consisting of 46 mayors and presidents of municipalities who used the resources of their local economic development offices to collect data and information and take part in the working groups essential for the success of this Action Plan. During February 2016, 46 mayors and presidents of municipalities, together with representatives of Chamber of Commerce and Industry of Serbia and the Development Agency of Serbia (DAS),supported the conclusion of Cooperation Agreement related to positioning of Serbia as a solid wood furniture exporter and made available all their expert and organizational potential in the local economic development sector.

In order to examine in detail all the challenges and possibilities for support to the sub-sector of wood furniture producers it was necessary to assess and analyse the situation in the whole wood industry sector that served as information basis for drafting the Action Plan for improvement of the situation in the sub-sector of high added value products. The analysis involved implementation of activities in two well directed and coordinated directions:

Scanning the environment- A precondition for developing different analyses was to collect adequate primary and secondary data. Data collection involved collection of publicly available statistical data (Statistical Office of the Republic of Serbia, National Employment Service etc.) Apart from collecting statistical data on foreign trade exchange (Statistical Office of the Republic of Serbia, National Bank of Serbia, Ministry of Finance, Chamber of Commerce and Industry of Serbia) the relevant data on the forestry and wood sector were also required.

In order to get a clear and precise insight into the sector, primary data were collected regarding the local economy and business entities by using the local sources of information assisted by the offices for local economic development and teams established by the mayors, in order to better understand the circumstances faced by the sub-sector of wood furniture production. All the requirements ensuring expansion of the industry and all obstacles for doing business that slow down the development of the sub-sector (e.g. administrative barriers, limited access to financial markets, lack of incentives for innovations, insufficiently trained labour) were discussed at the regional workshops in Nis, Zajecar, Raska, Belgrade and Loznica.

Qualitative analysis – Apart from collecting quantitative data, drafting the Action Plan also required a detailed qualitative analysis of conditions and potentials of the wood furniture sector and stakeholders in order to compare data and information, analyse them and determine their importance in terms

of steps and priorities necessary to position Serbia as a global exporter of good quality wood furniture. The expert consultants for furniture sector were in charge of this activity and based on the interview with the key stakeholders they formed conclusions on capacities, skills, interests and commitments that will most probably be in the centre of development of the entire sector.
For the purpose of qualitative analysis, numerous data and information were used from relevant databases (SBRA; Centre for Wood Industry Economics; Centre for Trade in Wood and Wood Products, Faculty of Forestry, Belgrade; Serbian Foreign Trade Statistics, UNECE, FAO and other), from official publications of the Statistical Office of the Republic of Serbia, internal data of companies that deal with wood processing and production of wood products but are not registered as industry branches 16 and 31 and other methods of data collection (interviews). In order to calculate the actual share of wood industry in gross domestic product of Serbia a production method was used according to the methodologies of Eurostat and the Statistical Office of the Republic of Serbia but with total coverage of companies and entrepreneurs dealing with wood processing and furniture production. For the purpose of calculating certain indicators regarding the degree of finalization of wood raw material the methodology of UNECE/FAO was used.

Qualitative analysis specified assessment regarding diversity and complexity of steps necessary for the development of competitive wood furniture producers. Such steps are defined in two categories: changes in internal capacity of a company in order to become competitive on the market (management capacity, labour skills, marketing and value chains) and reforms within the external context in which the wood furniture producers are operating (political, legislative, institutional, financial).

Verification of qualitative analysis' results was done during the regional meetings at which there was a consensus about goals and priorities at all levels. There was cooperation and verification of findings with all the key stakeholders in the sector: small and medium enterprises as well as entrepreneurs, local self-governments, PE "Srbijasume", Chamber of Commerce and Industry of Serbia, regional chambers of commerce, Development Agency of Serbia, Wood Agency, international donor projects (European PROGRES), and individual international and local experts. There were ten regional events in Nis, Zajecar, Uzice, Raska, Belgrade and Loznica with a total number of 118 participants out of which 47 wood industry,and the conclusions from these events constitute an integral part of the Action Plan. The Action Plan defines areas of action regarding the improvement of the situation in the sub-sector of wood furniture producers, activities within the area, implementing agencies, partners and success indicators. In parallel with the adoption of the Action Plan, the working group will also propose the monitoring plan for implementation and assessment of successfulness of the Action Plan as its integral part in which way the system for monitoring and evaluation of the Action Plan is established. The plan for implementation and assessment of successfulness of the Action Plan will enable efficient monitoring of Action Plan implementation and timely interventions within planned activities, in order to adjust the application of Action Plan to new circumstances.

Finally, the Government of the Republic of Serbia should establish a working group led by DAS with representatives of the Ministry of Economy, Ministry of Agriculture and Environmental Protection, Ministry of Education, Science and Technological Development, PE “Srbijasume”, PE “Vojvodinasume” and other institutions and agencies in charge of forestry or support to wood industry sector. The funds for the operation of the working group will be provided in cooperation with international development partners and private companies.

Focused interest and support of the republic Government is of key importance for promoting policy and programmes that enable the municipality or region to adjust to economic changes through improvement of competitive position in key production aspects: human resources, information and technology, capital and infrastructure. The Action Plan directs the efforts of the Serbian Government for improvement of forestry sector by providing adequate proposals for policy that would enable the use of forests in a way that is of optimal social value.

Analysis of the current situation in the wood processing sector of Serbia

The analysis of the current situation and problems in the wood processing sector of Serbia is divided into four areas.

Raw material base and wood sales system

The raw material base for the Serbian wood industry is most often viewed from the aspect of quantity, assortment structure, quality and price of wood assortments as well as the features of supplier that comprise the supply side. According to Glavonjic B. (2016) between 1.1 and 1.3 million m^3 of logs are processed annually in Serbia out of which mostly hardwood broad leaves logs (around 690,000 m^3), then poplar logs (around 380,000 m^3) and conifer logs (around 210,000 m^3). Considering this assortment structure the greatest quantities of poplar logs are used to produce wood packaging and wooden pallets and around 30,000 m^3 annually are processed into veneer panels. Conifer logs (round wood) is mostly processed into lumber, beams, posts, slats and other products for the purposes of construction and building of residential and office space.

With regards to the possibility of increased production and export of solid wood products with high degree of finalization, it can be oriented at increasing the finalization degree of the baseline quantities of raw material consisting of broad leaves hardwood dominated by beech.

Other assortments in the raw material base pertaining to firewood and pulpwood are mostly used for heating and industrial processes, primarily for manufacturing wood-based boards and wood fuels (wood pellets, wood chips). Around 0.95 million m^3 of fire wood and long-length round wood are consumed for industrial purposes in Serbia on an annual level.

Besides characteristics of the raw material base, an important role in the process of increasing the degree of finalization of the wood raw material is played by the supplier features and wood sales system. Technical round wood sales system for wood processing

Quantity	Number of buyers
Less than 100 m3	351
From 101 to 500 m3	203
From 501 to 1 000 m3	62
From 1001 to 5 000 m3	118
From 5 001 to 10 000 m3	18
More than 10 000 m3	8
Total	760

Source: Business databases of PE Srbijasumeand PEVojvodinasume; Vasiljevic A. 2015

Table 1. Number of buyers according to the quantity of wood raw material obtained from the two public enterprises for forest management in 2012

purposes in public enterprises is based on one-year contracts and auctions and the quantity of wood sold at auctions in 2015 was more than symbolic (just 4,654 m^3 or 1.02%).One of important conclusions from analysing the wood sales system relates to the fact that the first ten processors of technical round wood from broad leaves hardwood processed together 129,713 m^3 or around 19% of the produced quantity of this wood assortment in 2015. Moreover, only two producers are processing 20,000-25,000 m^3 annually. This shows that processing capacity is fragmented since all other processors process much below that level. Over 60% of them process under 1,000 m^3 of technical round wood from broad leaves hardwood annually. The situation is similar with processing of technical round wood from conifer trees. The three biggest processors process 10,000 – 15,000 m^3 annually and the biggest number of other sawmills process below 2,000 m^3. In case of poplar processing the exception is only the production of veneer panels with annual processing of over 30,000 m^3 of logs. Several producers of wood packaging process over 20,000 m^3 of logs, and the others between 5,000 m^3 and 15,000 m^3.

Table 1 shows data on the number of buyers of technical round wood from the two public enterprises in Serbia according to the quantity of obtained wood raw material.

Analysis of criteria of PE Srbijasume, as the most important supplier of wood raw material, shows that allocation of technical round wood quantities to certain buyers is done according to the following criteria:

1. **Buyers with their own installed wood processing capacities;**
2. **Number of stages in wood processing performed by the buyer;**
3. **Compliance with the previous contractual obligations the buyer who has complied with the contractual obligations in the current year, will be offered a minimum of approximately the same amount he had made in the previous year in the next year and**
4. **Development degree of the municipality in which the buyer's seat is located, i.e. facilities for processing with majority of employees.**

Public enterprises in charge for managing forests are not able to meet the needs of a certain amount of customer-wood processors and in this sense there is a request to extend production of logs where is allowed and to have all the available quantities of wood assortments aiming mostly for companies with the highest value added, without compromising the amount of logs received by SMEs.

When it comes to the quantity of raw material received by small and medium-sized enterprises, in order to increase their finalization, public companies will in accordance to their abilities, encourage these companies to direct their products from primary processing to companies engaged in the production of products with a high level of finalization in order to create value chain and thus contribute to reduce the export semi-finished products in favor of exports of finished wood products.

In 2015 processing of 1 m^3 of logs in Serbia and export of wood products achieved the valorisation effect of merely USD 275. In comparison, Croatia achieved the valorisation effect for 1 m^3 of logs through the export of wood products in the amount of USD 591 or 2.5 times more. One of the factors behind such a high valorisation effect for wood raw material in Croatia lies in the fact that enterprises dealing with production of final products out of wood obtained 65.3% of the total quantity of logs produced and sold from the state owned forests.

Having in mind that there are 668 active companies dealing with sawmill wood processing in Serbia as well as 341 entrepreneurs it may be concluded that public enterprises with their annual production of technical round wood cannot satisfy the needs of all registered processing entities. In circumstances when wood is the only source of income for the population in the areas rich in forests, such wood sales policy is justified. In other words, that means that public enterprises are faced on one hand with increasingly prominent requirements of "big" processors for additional quantities of wood raw material, and on the other hand, with the requirements of small processors saying they too have the right to certain raw material quantities.

For purposes of this Action Plan the size and utilization of the existing capacities of leading manufacturers of furniture and other high added value products were analysed. The results of this analysis show certain problems in that segment because of which the existing capacities are not used to extent possible. One of the important problems is the procurement of wood raw material, primarily logs,by producers of final products that also have facilities for primary wood processing. The quantities of logs obtained by certain leading furniture producers are not enough to satisfy their needs. Although such producers have the opportunity to increase the existing volume of production and export of solid wood furniture at least two-fold, they do not dare make such a step since they cannot procure sufficient quantities of logs. Even more since the analyses and calculations of the flow of wood and wood products in Serbia for 2015 indicate that almost 48% of the total produced quantity of logs from broad leaves hardwood are processed into products with higher added value and 52% are exported as low added value products: export of logs (4%), export of lumber (41%) and export of other products (wood profiles, wooden pallets and other low added value products) (Glavonjic B. 2016). With such a small quantity of wood raw material being finalized, Serbia cannot be considered at this point as a serious supplier of high added value products to the European or global market. Even more so since this small quantity of wood raw material that enters the value chain is dispersed into relatively high number of final product categories (several categories of furniture, wooden floors and construction joinery). That is one of the reasons why Serbia is still not recognizable as a country of certain wood product category with high added value (for example chairs or dining room furniture).In order to change this situation it is essential that all participants in the value chain (companies for primary wood processing enterprises engaged in the production of products with high added value, public enterprises, public institutions) contribute to the networking of companies to which a larger quantity of wood products with low added value would be directed towards finalization rather than in exports.

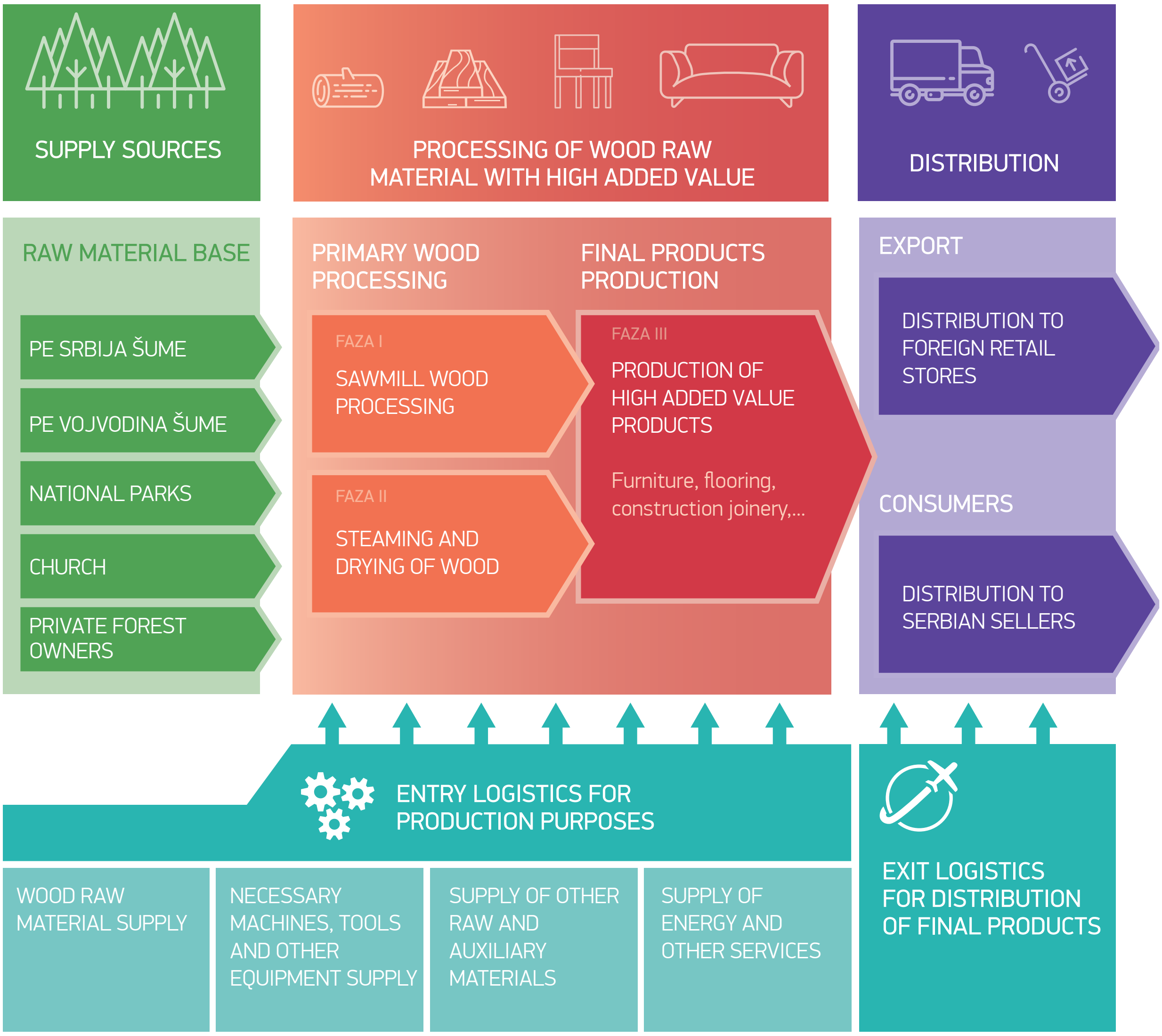


Diagram 1: Value chain model in the production of furniture and other high added value wood products with technologically closed production process

Although a great number of small sawmills are getting their supplies of technical round wood from private forests characterized by relatively small quantities as well as irregular delivery since most of the private forest owners do not own adequate machinery, trained labour and other elements of importance for a serious production of technical round wood.

The situation in the sectors of furniture and wood products production

Considering the organization of business activities there are basically two value chain models for production of solid wood furniture and other high added value products (floors and construction joinery made of wood).

First model: characterized by technologically closed process of production in a sense that companies have production units for processing technical round wood, capacities for steam treatment and drying of lumber and components and production units for manufacturing furniture out of lumber and components they produce (Diagram 1).

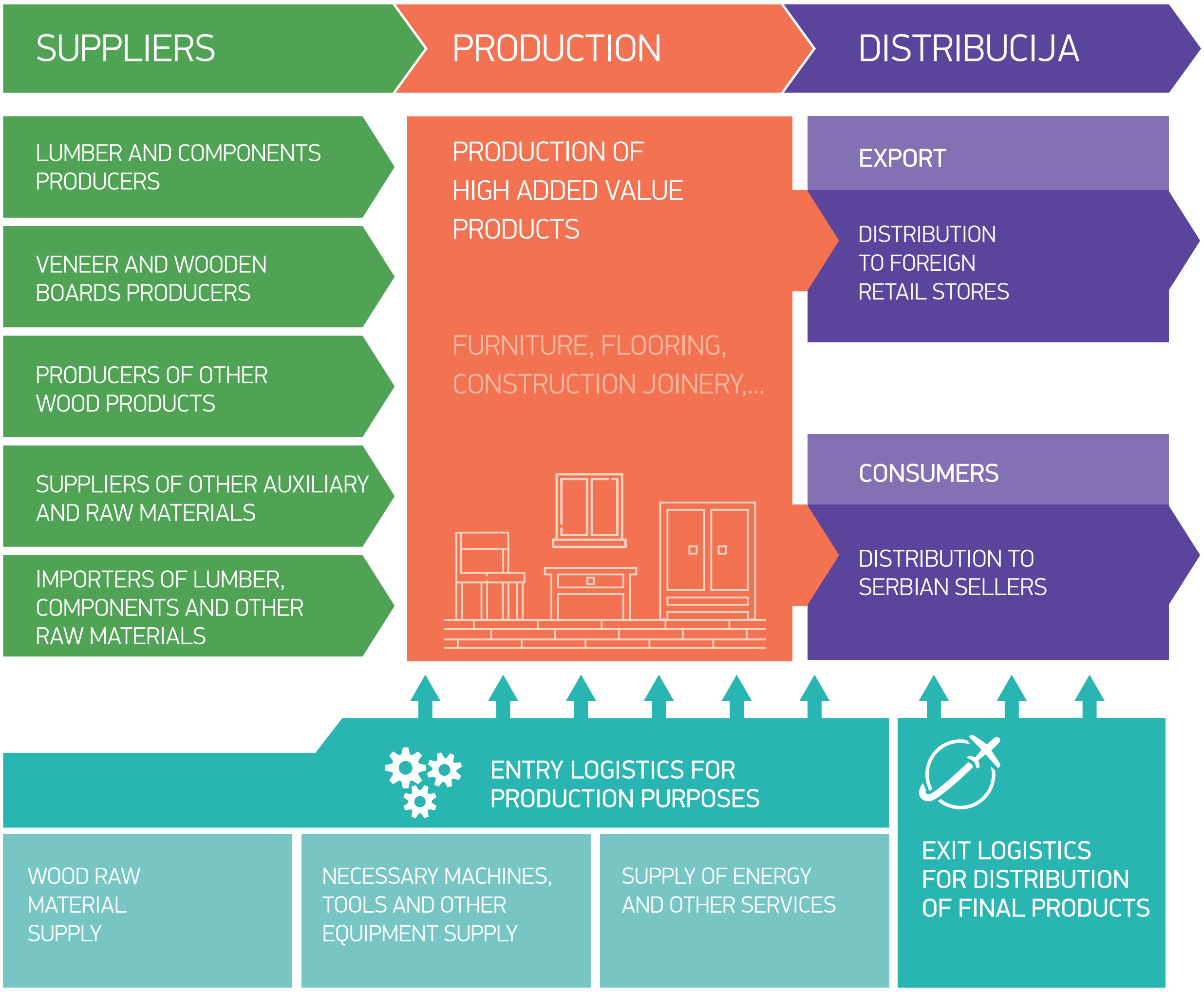


Diagram 2: Value chain model in the production of furniture and other high added value wood products with developed logistics for supply with the necessary raw materials and other materials

The main feature of this value chain model is the stability of supplying the production of furniture and other wood products with high added value in terms of organizing the processing of logs and lumber into components for final products according to structure, dimensions and quality required by the production of final products. This value chain model has its numerous advantages but some corresponding disadvantages as well. The most important advantages are:

- relatively high stability and reliability of supplying the production of final products with the necessary components according to the required structure, dimensions and quality;
- high percentage of utilization of the baseline wood raw material considering the fact that such companies have their own plants or facilities for using the wood residues for energy purposes;
- flexibility and fast adjustability in case of sudden or frequent changes of requirements by the end buyers of final products.

The biggest furniture producers and medium producers of floors and construction joinery opted for this value chain model in Serbia. The reason why they chose this value chain concept is the frequent uncertainty and oscillation in the supply system concerning the required quantities, structure and quality of lumber and components for production of furniture and other high added value products.

Second model of the value chain is characterized by a well-developed and strong logistics regarding the supply with the necessary raw materials and materials (Diagram 2). Producers of furniture and other high added value products have a relatively well developed supply chain by local and foreign suppliers with all raw materials and materials for production purposes.

The medium and small furniture producers and large producers of wooden floors and construction joinery opted for this value chain concept in Serbia. Some of the reasons are savings in investment for production capacities for primary wood processing, faster capital turnover and simplification of the supply chain. A well-organized supply logistics and reliable suppliers are of key importance for the functioning of such model. Experience of companies in Serbia with this type of value chain model are different and vary from those that have a well-functioning model to those in which this model frequently causes problems in the production process due to the oscillations in quantity, quality and prices of raw and other materials by the suppliers.
The gap analysis of both value chain models for the productionof wood furniture indicated that the first 5 disadvantages refer to the following:

1. Somebody else's product design
2. Issues in developing one's own sales channels at foreign markets
3. Fragmentation and insufficient connections between producers within the wood industry
4. Falling behind of local producers regarding technological and business processes
5. Lack of institutional support for the export of furniture and other high added value wood products

Somebody else's product design

The biggest exporters of solid wood furniture are producing and exporting furniture on the basis of samples, drawings and technical documentation obtained from their foreign buyers. To greatest extent, this orientation is the result of the following:

- requests of foreign buyers who, in most cases, represent wholesale dealers of furniture with their own sales channels for whom the Serbian producers are just an addition to their product range;
- inadequate number of permanently employed designers. The greatest number of local solid wood furniture producers do not have permanent staff of designers but are hiring them according to need. There are producers who opt for copies or modifications of somebody else's design when developing their own production programme.

A small number of producers have developed their own product models. The products developed in local companies are mostly sold on the local market and the surrounding markets. The models for such products are between 5 and 10 years old which shows that the tempo of developing one's own production programme is very slow.

Issues in developing one's own sales channels at foreign markets

With the exception of few solid wood furniture producers with their own sales channels in the surrounding countries, all other producers and exporters of this furniture category still haven't got their own developed channels for distribution and sales abroad (some producers do not even have that on the local market). The reasons for this situation are numerous. Partly, indecisiveness of producers due to the fact that development of own sales channels is a high investment and because there is a lack of experienced managers who could use their knowledge and skills to form such sales channels. That is why the development of one's own sales channels at the main export markets is still in the planning stage for some of the leading furniture exports.

Fragmentation and insufficient connections between producers within the wood industry

Although there are numerous projects by local and international organizations and institutions involving awareness raising, the need to define common interest and better connection of local furniture producers and processors of wood raw material, the situation in the furniture producing sector is still unsatisfactory regarding all those issues. This is best illustrated by the following example: in a municipality in the Southwest Serbia a furniture producer is supplied by lumber and components by the supplier who is approximately 200 km away and only 10 km away from him there is a wood processor who exports his lumber and components to China. There are many similar examples. The lack of awareness about the need to make associations, insufficiently efficient payment securities and lack of trust are just some of the causes for fragmentation and lack of connection between the producers within the wood industry's value chain. This results in the situation in which 1/3 of the total production of deciduous lumber is still exported as semi-product which contributes to the fact that the value chain of these products continues outside the country with engagement of technical capacities and labour in other countries instead of processing it in Serbia into some of the final products and thus contribute to employment of local capacities and labour. Specifically, in 2015 the export of deciduous lumber from Serbia amounted to 145,000 m^3 worth EUR 45.3 million. If this quantity of lumber is to be processed in Serbia for example into chairs alone, we would get around 5 million chairs the export value of which could reach around EUR 265 million or 5.8 times more compared to the actual value of lumber as semi-product. Furthermore, the processing of this quantity of lumber would generate at least 5.000 new jobs. From the stated example it is clear what effects could be achieved by increasing the degree of finalization of the wood raw materials (Glavonjic B., 2016).

The analyses of the value chain for the solid wood furniture production indicate that there are such possibilities, primarily in the existing capacities for production of furniture and other high added value products as well. This is confirmed by the fact that most furniture producers work in one shift.

Falling behind of local producers regarding technological and business processes

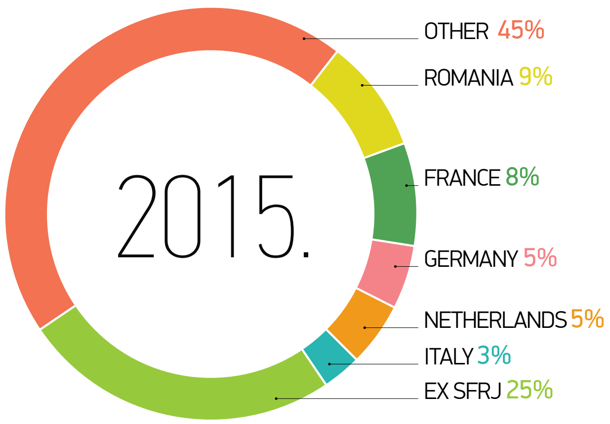
Technological modernization in production of furniture and other solid wood products is essential for every producer since it directly affects the increase in productivity and reduction of production costs. In circumstances of competition and market requirements for price reduction of finished products this area is of great importance for every enterprise. Surveys of Serbian furniture producers show that technological modernization is not satisfactory even if there are certain producers with high-performing modern technology. Nevertheless, most companies are still characterized by high degree of manual work and productivity level below average compared to the industry as a whole.

Apart from the stated, most producers, even those with production growth, have limitations in management structure. There are rare examples of companies that underwent managerial transformation and whose owners gave part of the managerial functions over to their managers. In many companies owners have rather limited professional knowledge. Many of them are still not aware that they became bottlenecks for development since they demand to be in charge of everything.

Lack of institutional support for the export of furniture and other high added value wood products

Having in mind that wood industry is directly contributing over EUR 80 million annually to the budget of the Republic of Serbia only through VAT payments, the budget appropriations for support to the wood industry development are merely symbolic. Except for the activities on promoting the export of furniture and other high added value products through participation of producers at fairs in Europe and Russia organized during the previous years by the former Serbia Investment and Export Promotion Agency, there were practically no other significant incentives to this industry. The value of individual cases of extended loans or incentives for employment of new workers is also symbolic when it comes to this branch of industry.

There are numerous reasons for this attitude of the state towards the industry that ranks third according to the number of employed workers in the industry and relies completely in its development on the local raw material resources attempting to provide maximum valorisation. One of the important ones is the lack of institutional organ or body that could deal to greater extent with the issues of policy and incentives for the development of Serbian wood industry.



Drveni nameštaj iz Srbije izvozi se u preko 30 zemalja (zavisno od godine) s tim da sledećih pet zemalja predstavljaju najznačajnije zemlje sa učešćem od oko 30% u ukupnom izvozu (29,9% u 2015.godini): Rumunija, Francuska, Nemačka, Holandija i Italija (grafikon 10). U 2015. godini na tržišta ovih 5 zemalja izvezeno je 48,1 milion USD.

Od ostalih zemalja od značaja za izvoz drvenog nameštaja značajno učešće imaju zemlje regiona i to Makedonija, Bosna i Hercegovina i Crna Gora. U 2015. godini na tržišta ovih zemalja izvezena je ¼ od ukupnog izvoza drvenog nameštaja (25,2%).

Graph 10: The share of certain countries in the total export of wooden furniture from Serbia [12]

Analyses of the current competitiveness of companies exporting the wood products to certain markets show that the value of their export is symbolic compared to the total turnover of these products on the selected markets. In order to conquer certain markets to the extent that would appropriately position the companies on the market it is necessary to implement a great number of activities, some of which are long-term (building trust, image etc.). That process demands institutional support to companies. Even more so since the Serbian wood industry companies have modest human potential in the top management segment and without the institutional support they have almost no chance to make a significant breakthrough to some of the selected export markets. A consortium of wood industry and forestry of Serbia aims to increase efficiency of use of the available potential and increase export of final wood products to the existing markets and conquer new markets as well. Consortia in different forms are instruments used in other activities as well and are greatly used in the wood industry of other countries (for example, Italy conquering the furniture market of the Russian Federation).

Government subsidies to any industry are not a long-term solution for strengthening competitiveness of companies in that industry. On the other hand, EU regulations do not allow export subsidies to member states. Having in mind the need to support local companies but also the limitations of EU regulations after Serbia's accession, it is necessary to strengthen the wood industry by supporting the exporters of furniture and other high added value wood products in the transition period prior to the full-fledged membership of Serbia in this organization. Many other countries (like Ireland, Hungary, Finland and the neighbouring Croatia) also had such support measures before their full membership in the EU. On the other hand, in some of the countries without support measures and strengthening of local wood industry before their official accession to the EU, the wood industry failed completely after they had joined the Union. Slovenia is an example since it has become the biggest exporter of wood raw material in the Balkans since 2010 (over 2 million m^3/annually).

12 Source: Serbian Foreign Trade Statitstics, Statistical Office of the Republic of Serbia, Belgrade, 2016

Having in mind all the above stated needs and positive and negative experience of other countries, some key support measures are proposed in this Action Plan to the exporters of final wood products that are of limited nature.

Analysis of major export markets

Wooden furniture from Serbia is exported to over 30 countries (depending on the year) and the following five countries represent the most important ones with the share of over 30% in the total export (29.9% in 2015): Romania, France, Germany, the Netherlands and Italy (Graph 10). In 2015 the value of export to the markets of these five countries was USD 48.1 million.

Among other countries of importance for the export of wooden furniture countries from the region like Macedonia, Bosnia and Herzegovina and Montenegro have a considerable share. One quarter (25.2%) of the total wooden furniture export was exported to these countries' markets in 2015.

Considering the export of certain wood furniture categories the ranking of countries differs from one category to another. Wooden chairs that represent the most important category in the wooden furniture export are mostly exported to France, the Netherlands, Italy and Montenegro. Over half of their total export goes to the markets of these four countries (53.1% in 2015). Main export markets for bedroom furniture are Austria, Germany, Montenegro and Bosnia and Herzegovina with a share of 53.3% in 2015. Belgium, France, Germany and the Russian Federation represent the main export markets for dining room furniture with a share of 56.5 % in 2015. The biggest export markets for other wooden furniture that represent the second most important category in furniture export, are the surrounding countries like Romania, Bosnia and Herzegovina, Montenegro, Croatia and Macedonia. The share of these countries in the total export of this furniture category was 69.7% in 2015.

The ranking order of the main countries for export of the listed furniture categories has been almost the same in the last ten years (with slight changes in certain years) which shows that producers and exporters from Serbia have a relatively stable position on the markets of these countries. However, the share of the furniture exported from Serbia in the import and consumption of certain furniture categories in the countries representing the main export markets is symbolic with the exception of Montenegro, Macedonia and Bosnia and Herzegovina. Thus, for example, the Serbian share in the total import of wooden upholstered chairs was 1.07% in France in 2015, 3.16%in the Netherlands and2.7%in Italy. The situation is similar with other furniture categories on the EU market. Unlike the markets of the EU countries, Serbia is the main supplier of wooden chairs for Montenegro (49.8%) and Macedonia (39.5%). The same applies for dining room furniture, bedroom and other wooden furniture. The fact that wooden furniture is exported from Serbia to over 30 countries as well as its symbolic share in the total import of wooden furniture in certain EU countries indicates that Serbia has still not become a country recognized by furniture export and strong positions on the European Union's furniture market.

Regulatory framework

The key drawback in the regulatory area is the non-existing umbrella law concerning the Serbian wood sector. Furthermore, the term wood sector includes forestry, wood industry and production of cellulose and paper. At this moment, except for forestry regulated by the Law on Forests, other areas within the wood sector are functioning according to general laws. The Law on Forests governs the basic functions in the area of forestry and wood sales. Since the producers within the wood sector, due to the nature of their work, are mostly referred to one another and significant part of turnover is realized between the companies in these three areas, partial regulations in one area often cause problems in the functioning of companies in the other two areas and vice versa. That is why the resolution of elementary problems burdening the operation of companies within the wood sector is slow and inefficient. Failure to consider the entire wood sector while passing regulations is significantly reducing the efficiency of using potentials available to the sector which is reflected on the effects that the sector is accomplishing as a whole. Why is the umbrella law necessary? In the developed EU countries and Croatia as a country in the region, the wood sector is viewed as a whole and as such it is governed by regulations. Such an approach has multiple effects starting from creation of common goals, strategies and operational plans to faster and more efficient problem solving within the sector, more efficient use of potentials and significantly better results achieved at the sector level.

Considering that Serbia started the talks on EU accession, the acknowledgment and implementation of EU regulations became an integral part of everyday practice in Serbia. Through the Green Public Procurement Directives (2004/17/EC and 2004/18/EC, http://ec.europa.eu/environment/gpp/index_en.htm) and instructions on their legal ground, the EU enables the member states to introduce criteria promoting ecologically most acceptable materials and sources of energy into their public procurement, even if they are more expensive than the alternative products on offer.

Considering the stated EU directives, it is clear there are all legal and formal preconditions to include wood products into public procurement system in Serbia as products that will be at an advantage in procurement compared to the competitive products from other materials even at a somewhat higher price.

The most important categories of wood products that should be included in the public procurement system in Serbia are wooden floors, wooden windows and doors and wooden office furniture. Production of these products in Serbia, in wood industry companies, is more than enough for local needs.

System of secondary and tertiary vocational education

At this moment, the utilization of raw material resources from local forests requires the engagement of low skilled labour for tasks characterized by the basic degree of processing, without the application of technological measures and with small added value such as cutting and processing of lumber. With every increase of finalization to the highest level - the production of solid wood furniture, the demand for good quality, qualified and well-trained labour significantly increases. Although craftsmanship and technical professions in the area of final wood processing are increasingly in demand on the market, the interest in secondary schools educating these profiles are declining every year. Due to the low interest of pupils who completed primary schools in secondary vocational schools, especially three-year manufacturing profiles, many classes will be shut down in the next few years. Among them there are many of those educating professions that are in short supply in the area of final wood processing.

On the other hand, employers and local self-governments are critically interested in survival but also in improving the teaching quality for scarce professions within the sector of final wood processing. The employers are prepared to become involved, together with schools, in order to improve the quality of competencies of youth leaving the secondary schools. Most employers claim that the people they hire do not have sufficient practical knowledge so they have to invest additionally in their training and professional knowledge. The employers in the wood processing sector support the practice of certain EU countries (Austria, Germany) in which the companies hire teachers/mentors to directly familiarize the students during practical work with production processes, technologies for processing materials and modern machines and give feedback to employers on the skills and affinities of students. The employers agree that hiring a mentor is a good idea and that the state should stimulate employment of mentors primarily in large, export-oriented production companies that have the capacity for employing students graduating from three-year profiles dealing with final wood processing.
There are minimum two levels in this area that we should consider. One is the secondary vocational education and the other is faculty education.

Serbian educational system is educating students for the following professions for the purposes of wooden industry:

- carpenters, upholsterers, painters, wood-engravers
- technicians for final wood processing
- technicians for modelling furniture and wood products
- vocational wood technology engineers
- BSc engineers and MSc engineers for technologies, management and design of furniture and wood products.

Vocational profiles pertaining to secondary education are being educated in 7 towns in Serbia for the needs of wood industry companies, and tertiary education professionals are educated at the Faculty of Forestry in Belgrade. Table 2 provides an overview of students enrolled into secondary vocational schools in 2015/2016 school year.

The total number of enrolled students in all grades, trained for carpenter's profession, equals 156, and for the profession of a technician for final wood processing and modelling the wood-based products is 704. According to the data obtained from secondary vocational schools, the average number of graduate carpenters is 40 annually, and 152 technicians Serbia-wide. Such number is not sufficient to accommodate the needs of more than 4,000 business companies and entrepreneurs as the natural outflow caused by the retirement of staff from such business companies by far exceeds the number of graduate carpenters and technicians.
Secondary vocational schools have an option to organize 1-2 year long specialist and craftsmanship

Place	Naziv škole	Carpenters			Technicians for final wood processing and modelling			
		Grade 1	Grade 2	Grade 3	Grade 1	Grade 2	Grade 3	Grade 4
Grdelica	Secondary vocational school	16	15	17	17	20	16	17
Sremska Mitrovica	Food processing, forestry and chemistry school	0	0	0	21	20	15	16
Kraljevo	Forestry school	15	14	0	22	0	11	13
Beograd	Drvoart	8	0	0	40	46	22	64
Kragujevac	Technical school	21	0	18	23	20	17	19
Ivanjica	Technical school	0	0	0	22	14	20	13
Novi Sad	Technical school MilevaMarićAjnštajn	7	8	11	21	16	21	22
Apatin	Secondary civil engineering and wood-processing school	0	0	0	19	14	6	7
Subotica	Technical school	0	6	0	18	16	18	18
TOTAL		67	43	46	203	166	146	189

Source: School secretariats

Table 2: Overview of the number of enrolled students in secondary vocational school for wood crafts in Serbia in 2015/2016 school year

education, as well as other types of professional training: 2-year education for practical work, professional courses and training up to one year (the Law on Secondary Education and Upbringing "Official Gazette of RS" no. 55/2013). Specialist and craftsmanship education, as well as re-qualification and additional qualification of persons with elementary school, incomplete or inadequate secondary school is conducted in elementary and secondary vocational schools as well as in licenced institutions for informal education of adults.

Since 2005, secondary vocational schools that train staff for the needs of the wood industry have taken an active part in modifying the educational profile for professions in the wood processing industry. Experts in practical teaching, professors and principals of secondary vocational schools in this area consider that the existing curricula adequately address the requirements of practical work and wood-processing companies.

1st year	2nd year	3rd year	4th year	TOTAL
97	**72**	**56**	**29**	**254**

Source: the Faculty of Forestry – Office for Teaching and Student Affairs

Table 3: Overview of the number of enrolled students at the Dpt.for Technologies, Management and Design of Furniture and Wood Products at the Faculty of Forestry, Belgrade, in the 2015/2016 academic year.

Students in secondary vocational schools in Serbia, as well as the persons who are schooled under 1 or 2-year programme have relevant professional practice, according to Serbian curricula. Within the implemented reforms, 3-year educational profiles have been assigned considerably higher number of professional practice classes. Professional practice can be carried out, depending on the course type, in school labs, workshops and plants, or companies, and also at craftsmen – entrepreneurs (depending on the educational profile and the course itself).

Four-year vocational schools have proportionately higher number of general-type courses than three-year schools (or one-year or two-year craftsmanship trainings).

Every secondary vocational school that trains staff for the needs of the wood industry has concluded contracts with employers (companies or entrepreneurs) on the organization of professional practice.

As regards highly qualified staff – engineers, between 80 and 100 students (this figure varies on a yearly basis) enrols in the 1st year of studies at the Faculty of Forestry in Belgrade – Dpt. for Technologies, Management and Design of Furniture and Wood Products, to meet the needs of the Serbian wood industry. The number of students, per year of study, who are currently enrolled in the Department of Technology, Management and Design of Furniture and Wood Products is provided in Table 3.

On average, 23 students graduate from this faculty on a yearly basis, which is insufficient from the aspect of profession-wise requirements. It is evidenced by the fact that a number of companies in the Serbian wood industry employs professionals in machine engineering, organization of work, as well as forestry and other professions.

Teaching at the undergraduate studies programme at this Department is organized according to the 12+3 concept, where students have 3 weeks of professional practice within a semester, covering all vocational courses. It is for this reason that the faculty signed the Agreements on Strategic Partnership with 27 wood-industry companies where students have the opportunity to perform professional practice, summer practice and research for the purpose of preparing their undergraduate thesis.

The study programme of undergraduate studies for technologies, management and design of furniture and wood products is conformed to the profession's requirements for highly educated staff in different specialized areas in such a way that after the 2nd year students opt for one of the three majors listed below:

- technologies,
- management and

- design of furniture and wood products.

The students thus acquire, in addition to basic disciplines, additional knowledge within each of the aforementioned majors.

In addition to undergraduate studies at the Department for Technologies, Management and Design of Furniture and Wood Products, as of 2013, students can also enrol in the study programme of applied studies of the Furniture and Wood Products Technologies which last 3 years. The studies are designed for such students who are trained for operating engineers' activities during their three-year long education.

Upon completing the undergraduate studies, subject to their aspirations and inclinations, students can develop their skills through master and professional master studies at this Department. In that way, the entire process of educating highly skilled staff in various specialized areas for the needs of the Serbian wood industry has been encompassed at the Faculty of Forestry in Belgrade – Department for Technologies, Management and Design of Furniture and Wood Products.

At the College of Applied Professional Studies in Vranje, professional engineers of wood-processing technology are trained. The annual number of students who enrol in this school equals 20.

Main issues in the process of education of staff for the needs of the Serbian wood industry

The existing system of secondary education of staff for the needs of the wood industry is faced with numerous problems, particularly in the segment of conducting professional practice, which deflate employers' motivation to take an active part in the organization of training and to enhance its quality:

a) secondary schools do not have, for the time being, legal grounds for involving the representatives of local self-government and industry in the enrolment process;
b) employers do not have any influence on the selection of students they are to be assigned to for professional practice (students are usually assigned to specific employer for practical work according to alphabetical order, rather than their affinities, performance or otherwise);
c) employers do not have a mechanism for removing or otherwise reprimand a student who commits a severe misdemeanour during his/her professional practice (a theft, a severe breach of safety-at-work rules, etc.)but have to contact the school to conduct disciplinary proceedings which are defined through appropriate regulations;
d) regulations do not stipulate the relationship between the school and the employer regarding the fulfilment of safety-at-work obligations and responsibilities – in particular, this poses a serious problem in the wood-processing industry which is associated with considerable risk of injuries at work during the training. There is no legal and subordinate legislation, which defines the rights and obligations between companies, schools and students during the realization of practical training;
e) companies do not have contractual obligation to assign a supervisor for practical work (a mentor) to the students engaged in prac-

tice, as a person with relevant professional experience, who should monitor and guide the work of students, evaluate their performance and the accomplished results and prepare respective reports for their subject teachers, or for the school. The employers consider that the engagement of one employee to conduct mentoring activities alone, i.e. training of students engaged in practice, would be expensive and not cost-effective. In other words, provision and financing of mentors is not regulated, their required competence and experience, as persons employed in the companies thay had to allocatepart-time to working with students;

f) Businessmen are not sufficiently informed of the possibilities offered by re-qualification and additional qualification systems of the secondary unemployed work force, i.e. adult unemployed persons, who are present on the labour market. Re-qualification or additional qualification last between six months and one year, where the employer has a possibility to influence the content and type of professional re-qualification or additional qualification in agreement with the organizer (school). A person undergoing re-qualification or additional qualification is located and engaged at the employer's on a full-time basis, i.e. he/she is trained through work, and the work engagement through training is covered by the agreement on re-qualification, or additional qualification.

g) Titles of occupations and educational backgrounds are not uniform as well as qualification standards, which describe the competencies, to be able to recognize them the same way by employers, schools, the unemployed, students and labor market

Although the trades and technical professions in the sphere of final wood processing are increasingly demanded on the market, the students' interest in secondary schools thateducate these profiles, declines every year. According to the 2013 research, carried out for the needs of the German Development Agency GiZ,[13] specific secondary schools running three-year courses in the area of wood processing intensively close their three-year courses as a consequence of, as evidenced by the research, a low reputation of trades and technical professions. According to the data from secondary vocational schools that train the staff in the sphere of forestry and wood industry, not a single upholsterer was schooled in the entire territory of the Republic of Serbia in the 2013/2014 school year. Owing to poor interest shown by the students finishing elementary schools in secondary vocational schools, and particularly in three-year production profiles, more than 200 classes will be wound down in the following years, which includes a lot of those that train such professions which are in short supply in the field of final wood processing.

In four districts: Belgrade, Nis, Sumadija and Southern Backa, the least interest is shown in wood and forestry schools where insufficient number of students enrolled in all classes in the 2013/2014 school year. For instance, in Drvo-art, a secondary vocational school in Belgrade, all three-year courses in the sphere of final wood processing have been closed down since 2013: carpenter, wood modelling,

13 Dukić, M. *The image of trades and technical professions in Serbia*, Deutsche GesellschaftfürInternationaleZusammenarbeit (GiZ) GmbH

musical instruments builder and upholsterer - decorator. If such trend continues, the Forum of Secondary Vocational Schools predicts closing down of 50 secondary vocational schools in the near future, among others those that educate the work force for the wood industry's needs. It should be noted that such a trend, in a way, pursue the objectives of STRATEGY for secondary education in Serbia until 2020. Specifically, it is intented to increase the percentage of students who are being educated in grammar schools (means for further education) by double in relation to vocational education, which in the same period in time will be halved. In addition, there are also significant impacts, especially Anglo-Saxon experts, who are pushing for changes in secondary vocational education in the direction of teaching students such knowledge and skills that will enable lifelong learning in line with the changing technology and labor market requirements.

The employers and local self-governments are vitally interested in the survival, but also in the improvement of the quality of teaching in the professions in short supply in the final wood-processing sector. Employers are ready to be engaged so that they could, in cooperation with schools, improve the quality of competencies held by the young people finishing secondary schools. The majority of employers claim that the staff they employ do not have sufficient skills and that they must make extra investments in their training and acquisition of professional skills.

Main issues in the segment of education of highly professional staff are related to financial standing of faculties and a lack of financing options as regards students' professional practice in companies. Students themselves participate in bearing the costs of professional practice, with rare individual examples of certain companies that cover a part of the costs.

The above stated analyses clearly show that the education system in Serbia, both secondary and that of higher education, is totally complete in terms of training staff of most important specialized areas required by the Serbian wood industry. Moreover, some specific professions have been introduced in the secondary education system during the previous period (wood modeller, musical instrument builder, upholsterer decorator, etc.). The education system has thus clearly showed that it is capable of recognizing the needs and requirements of the profession and, should a need arise for some new specializations in the future, the experts in the education system will surely be able to recognize it and introduce it in the educational process. Nevertheless, there are certain problems in communication between the education system and the industry. The following ones are particularly prominent:

- insufficiently informed owners of companies regarding the specializations trained in the Serbian education system. This problem is particularly emphasised in employing highly professional staff, where, in a number of instances, the job opening requirement is only an engineer's diploma of the Faculty of Forestry, without stating a more specific area. The result of such approach is the employment of personnel who are not educated for the needs of the wood industry and who for the first time encounter the wood-processing operations and production of furniture on entering into employment contracts. To overcome this problem it is necessary to have greater involvement of representatives of the Wood Industry in the development of the National Qualifications Framework (NQF).

- too high expectations of the owners of companies who expect that staff coming from the educational system should immediately be skilled in performing all the tasks they are faced with in practice.
- a lack of interest on the part of the largest companies to take a more active part in organizing professional practice for students and secondary school pupils. The examples of companies willing to admit students to summer practice are scarce.

The aforementioned should be supplemented with the fact that in the transition process, owing to all the problems associated therewith, the transfer of knowledge from experienced staff to younger staff has not been sufficiently made. That problem is nowadays reflected in some companies dealing with the manufacture of furniture and other wood products with high level of finishing.

Cooperation and coordination between public authorities and industry

The stated problems, and some other as well, have still not become the matter of concern for relevant professionals and the Government. The profession is almost completely deprived of any influence upon the creation of economic policy, since it has almost no impact upon its creation through the Chamber of Commerce and Industry. On the other hand, professional associations are divided and void of common goals and action plans. Given that the problems and restrictions associated with strengthening of the competitiveness of the Serbian wood industry are not yet on the Government's agenda, it proves that they are, for the time being, ephemeral, deprived of any serious commitment of the Government towards their resolution. It shows to what extent the Government is inert as to the issue of strengthening the local wood industry's competitiveness. If such situation prolongs, the competitiveness of the Serbian wood industry on the international market will become increasingly poor which will make its recovery very painstaking, costly and time-consuming.

The cooperation and coordination between public authorities and professional associations within the Serbian wood industry can be qualified as suboptimal. With the exception of occasional public invitations for participation of professional associations, clusters and small and medium-sized enterprises in the entrepreneurship development programmes announced by the Ministry of Economy, other types of cooperation were almost completely missing. Moreover, in the line Ministry of Economy, under the system of frequent optimizations, the wood industry sector has become completely invisible. To some extent, it is due to inaccurate data of the official statistics regarding the share of the wood industry in gross domestic product, the number of employees, operating revenues and other indicators where the results (parameters) of the wood industry are considerably underestimated relative to its actual results achieved.

The facts that the Serbian wood industry directly contributes to the Budget of the Republic of Serbia with more than EUR 80 million annually through the system of VAT collection, and also nearly EUR 200 million worth of foreign trade surplus, were not sufficient for establishing, within the Government, a special body – the Wood Industry Directorate - to deal with the development of this industry. Due to the lack of a separate state authority, it was not possible to implement direct incentive measures for strengthening the Serbian wood industry competitiveness.

Non-conformity between the forestry and industrial policy is yet another example of a lack of coordination of public authorities that are directly reflected on the operations of the Serbian wood industry.

The only professional association within the Serbian Chamber of Commerce and Industry that dealt with the issue of forestry, wood processing and the production of cellulose and paper has been merged with the Association for Agriculture, Food Industry, Forestry and Water Management after the latest optimization. The wood industry is not even present in the name of the new association which testifies to a complete lack of care for the industry fully relying its potentials on domestic raw materials. In a nutshell, at this point the wood industry represents one of the rare industries in Serbia that almost no one deals with in a systemic fashion, nor is there a body in the state administration system to be addressed with requests for resolving the problems that this industry is faced with. It all seriously undermines its competitiveness, which threatens, to large extent, the survival of a large number of companies, with the rising pressure of the competition present on the local market.

Analysis of competitiveness of wood-processing sector and presentation of business opportunities for Serbia on selected target markets

The previous items of this Action Plan have provided analyses of the current status of the Serbian wood-processing sector and pinpointed the critical issues it is faced with. On these grounds, it may be generally inferred that its current competitiveness is not unsatisfactory, and neither is satisfactory with respect to the potentials it avails of and the possibilities offered by the current consumption of specific wood-product categories on the European and global markets.

Competitiveness of Serbian wood industry enabling it to successfully compete at the international market with its high added value products greatly depends on the available resources, on the efficiency of use of those resources and competitiveness of wood products from other countries.

In the following text the most important causes of unsatisfactory level of Serbian wood industry competitiveness have been identified and explained as well as some of the consequences of such situation.

First cause is the fragmentation of technical wood processing since it is processed in 1008 sawmills (companies and entrepreneurs together). That is the result of oversized capacities for sawmill processing of wood compared to the available potential of technical wood in the Serbian growing stock and the wood sales system according to the principle "everyone gets a small share". The fragmented production and lack of connection between the companies leads to a small physical production volume and independent and disorganized approach to export often results in mutual competition. The deranged value system and disrespect for partnership relations among companies are special problems related both to social trends and their impact on the business sphere.

Second cause is the lack of recognizable wood products exported from Serbia, most frequently due to small quantities exported. Problems in design, promotion and distribution of products are additional reasons for their low competitiveness on the export markets of the EU countries.

Institutional **lack of organization and lack of a clear strategy for the development of Serbian wood industry** besides the fact that very often in the Government documents this industry is referred to as a strategic industry, **represent the third cause** for unsatisfactory competitiveness of this industry.

Fourth cause is the negative impact of macroeconomic policy on the wood industry development. It is a well-known fact that exporters of wood products with high degree of finalization in Serbia do not get adequate incentives or position in fiscal policy. There are no essential instruments and measures that would stimulate the export of wood products of high degree of finalization. Some of the measures of macroeconomic policy are often not cost-effective for wood processors and furniture producers. Even more so, since while adopting these measures it is not taken into account that these two industries are low accumulation branches. Their low accumulation feature is additionally worsen by falling price trends for final products on the world market on one hand, and increased prices for the production inputs and doing business on the other.

Fifth cause is represented by unregulated relations between the wood industry and forestry on an institutional level. Instead of partnership relation with the forestry sector, on whose resources the wood processing in Serbia is mostly based, partial interests and petty egoism in mutual relations do not ensure efficient use of available resources of the two sectors. This situation is especially reflected in the segment of wood raw material price and quality that are, to great extent, not balanced. Due to the institutional inefficiency in dealing with problems pertaining to relations of these two sectors, the problems are becoming increasingly complex over the years.

Technological development, modernization of production and investments are slowed and insufficient for the Serbian wood industry to become modernized to the level that would ensure adequate competitiveness of its products on the increasingly demanding foreign markets. **This fact is also the sixth cause** for its unsatisfactory competitiveness.

The Serbian wood industry as an industry of a relatively small country is destined to be export-oriented. The analyses of export share in the total business revenue of this industry show that it ranges from 38% in furniture production to 56% in wood processing. The fact that Serbian wood industry still does not export over 50% of its domestic product is the *first* unsatisfactory thing related to its competitiveness on the international market. Furthermore, the goal of USD 500 million worth of export in 2010 that was set in the Strategy for Serbian Economic Development until 2010 was still not accomplished even five years after 2010. That is the ***second*** unsatisfactory issue. Total export of wood products in 2015 was USD 363.7 million which shows it is necessary to invest a lot of effort to reach the level of USD 500 million. This is because the average growth rate for wood products export in the period 2010-2015 was only 3.8% and because export dropped by 12.4% in 2015 compared to 2014 (2014 was the year with the highest recorded value of export in the last ten years – USD 415.4 million). Compared to Croatia (from which over 65% of production value is exported) the export of furniture and wood products from Serbia in 2015 was 2.7 times lower and 1.6 times lower compared to Bosnia and Herzegovina.

Third unsatisfactory thing is the relatively low value of export of wood products per employed worker. In 2014 it amounted to USD 18,291 /per worker and compared to Croatia and Bosnia and Herzegovina it was significantly lower. Compared to the developed EU countries this indicator is several times lower.

Fourth unsatisfactory thing is the fact that low utilization of production capacities contributed to very modest business results with reported net losses 1.96 times higher compared to the net profit in the last five years. Total net business losses in the last five years were EUR 157.3 million which shows that this industry is financially and materially exhausted due to the many years of operating with losses.

In view of the above, and also considering the fact that the accelerated development of the Serbian wood industry requires that production, trade and general developmental changes be carried out so that it can secure a safe place in the overall development of Serbia and achieve a satisfactory position of a competitive supplier of wood products characterized by high level of finalization on the European and global markets, below are presented the most significant elements of the targeted competitiveness that will be intensively worked on in order to be accomplished in the following five years. In that sense, the Serbian wood industry should and can look as follows by 2022:

1. it represents an economically successful and profitable industry which competitively exports more than 60% of its domestic product, and the products of high level of finishing account for more than 2/3 of its value;
2. it is restructured and harmonized with the available raw material resources, contemporary programmes and made free of medley, i.e. it dominantly produces what it can and is capable of doing well and what it can market on local and foreign markets;
3. its backbone comprises of large companies that represent local and regional leaders in the segments of the products they manufacture, which are connected, in the Wood Industry Consortium, with SMEs, as well as with local suppliers, governmental institutions, banks, insurance companies and other organizations of relevance for its development;
4. it provides good opportunity for continuous investments, employment and development;
5. it is attractive to investors and young professionals as it switched from labour-intensive to knowledge-intensive industry that is fully market-oriented.

To reach the target competitiveness is a complex feat, the implementation of which depends on a number of drivers, from market, administrative, technological, programme, staff-related ones and others. In that regard, the solutions and measures to be taken within the prospective Serbian developmental policy are of major importance, where the wood sector (forestry and wood industry) will be considered as a single sector with harmonized forestry and wood-industry policy. In that respect, the forestry will also make its contribution to the achievement of target competitiveness of the Serbian wood industry through its active participation and continuous dialogue with the wood industry representatives

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Therefore, this opportunity for the wood industry should not be missed. The next arguments testify to this claim:

- The demand for furniture and other solid-wood products on the European and global markets is high and rising. Over the last fifteen years, wood as a natural material has seen a true renaissance, which still carries on, and trends in this area indicate that global growth of consumption of wood and wood products will continue in the following twenty years.
- Serbian raw material resources can provide local manufacturers with a competitive advantage over the producers coming from other countries on specific export markets.
- By increasing the efficiency of using own potential, along with the support in implementing the defined development programmes, the Serbian wood industry can assume a much better position in the regional and global trade of furniture and wood products with higher added value than it is the case now.
- An adequate allocation of wood resources to manufacturers of export wood products with high added value will ensure creation of thousands of new jobs in mostly undeveloped areas rich in forest.

Based on an analysis of consumption trends, trade flows and future trends on the European and global markets of furniture and wood products, below are presented 4 groups of programmes with which Serbian wood industry can and should deploy to use its development chance and position itself as a significant and competitive supplier of the European and global markets with specific categories of wood products:

The Programme of hardwood products (deciduous trees)

The most important strategic products in the category of hardwood, primarily beech, will be represented by:

- the sitting furniture (chairs)
- the wooden dining-room and sleeping-room furniture (tables, beds, chests, cabinets)
- the construction joinery and flooring made of deciduous hardwood
- parts of furniture made of solid and veneer board and
- wooden accessories as relevant products intended to increase the level of utilisation of wood material (cutting boards, suit hangers, etc.)

The programme of coniferous tree products

Although Serbia has relatively meagre resources of coniferous trees, *the "Programme of production and export of engineering products made of solid coniferous trees"* has been defined, nonetheless. The reason resides in the fact that the production of these products in Serbia can be intensively developed based on the import of coniferous material from neighbouring countries as the ratio of valuation of price of 1 m^3 of the installed wood raw material and the sale price of finished engineering products is within the range 1 : 6-8 times. On the other hand, the demand for such products in Europe and in the world is almost unlimited for certain products, whereas it reflects two-digit growth rates for other products.

The backbone of this programme will consist of the products falling within the construction product category, first of all:

- impregnated trusses made of laminated wood, including a combination of coniferous trees and beech,
- windows and doors
- interior walls (partition) panels,
- impregnated elements for windows and doors.

The contracting programme – furnishing buildings on a turn-key basis

Selection of contracting as one of the strategic directions of development of the Serbian wood industry is a result of the fact that certain companies from Serbia successfully conduct these activities in the country and abroad, as well as the fact that furniture and other wood products (windows, doors, flooring and other products) account for more than 60% in total costs of furnishing buildings. In that regard, contracting as a model of development programme enables stronger connection of domestic companies and marketing of domestic furniture and other wood products used for furnishing buildings in the country and abroad.

The programme of wood-based power generation

Along with implementing the programme of manufacturing the selected strategic products, the programme of power generation from wood biomass will evolve as well, which will wrap up the process of a holistic and cost-effective use of the wood biomass. In that regard, the companies will have at their disposal the instruments of support for the construction of heat and energy power plants as well as the system of incentive prices for the electricity generated from the woody biomass.

The above programmes, with their respective products, represent the strategic programmes of the Serbian wood industry which will lay the foundations for its prospective development, to be also encouraged by the Government through its measures. On the other hand, it does not imply that other wood products that are not integral elements of these development programmes are less important and that someone will hamper the development of their production. All these products have their place, role and importance in the Serbian consumption and export.

Serbia has a large potential for expanding the production and export of furniture and other wood products with high level of finishing through the aforementioned development programmes, and what needs to be done now is a combination of short-term and mid-term measures for gradual positioning of Serbia on the map of global suppliers of these products.

As a result of the development of a dynamic sector of furniture and other wood products with high added value, Serbian high-quality forest resources will be utilised which will help create new jobs and reduce unemployment rate in local environments, particularly those rich in forest.

Potential target markets for the selected development programmes and product groups

Starting from the local market requirements, but recognizing the fact that its potentials will not be sufficient for marketing the entire scale of prospective production, a need emerged to define major export markets for the selected product groups. In that regard, potential target markets have been divided in four groups:

1. local market,
2. regional markets,
3. member-state (EU) markets and
4. third-country markets

Such classification of potential markets is a result of the fact that domestic companies already have developed business relationships with partners from the aforementioned groups of countries.

Local market

Based on the analyses of generated operating revenues and foreign trade balance of the Serbian wood industry, the estimates have been derived as to the demand of local market for specific product groups

Wooden windows and doors	54-56 million €/year
Wooden flooring	6.8-7.5 million €/year
Sitting furniture	21-23 million €/year
Wooden dining-room furniture	13-15 million €/year
Wooden sleeping-room furniture	17-19 million €/year
Wooden accessories	1.4-1.6 million €/year

in the following five-year period, as follows:

The West Balkans regional markets

Although considered relatively small compared to the markets of the EU countries, USA and other major markets from global perspective, regional markets are important for marketing the products of the Serbian wood industry. It is evidenced by the existing trade links and business relations between the companies from Serbia and neighbouring countries which are the result of proximity, language similarities, facilitated communication and CEFTA agreement. Table 4 shows the data on the value of import for the selected product groups from specific countries in the region as indicators of potential for even better positioning of the companies within Serbian wood industry on specific markets.

One of significant changes that took place, over the last three years on the market of wooden furniture in the countries in the region, is the penetration of Turkey and its positioning as an important supplier of wooden furniture in Macedonia and Albania.

EU markets

Among the EU markets, the following have been chosen as target markets: Germany, France and the Netherlands, because they represent large importers of the selected product categories on the one hand, and because of the existing commercial ties and diaspora, on the other. Table 5 shows the data regarding the value of import for the selected product groups in these countries.

Third-country markets

The market of the United Arab Emirates has been chosen as the main target market among the third countries. The main reason for choosing it is the fact that it is a growing market when the selected groups of products are concerned and that the trend of growth of their consumption will continue in the years to come. It actually means that this market has room to absorb certain wood products from Serbia, despite the fact that the companies from China and Europe have been present there for quite a while.

The said target markets will represent the starting point in creating the policy measures in the part related to establishing partnership between the institutions and companies from Serbia and the institutions and companies from these countries. Besides, the number and size of the selected target markets are optimal, bearing in mind the potential volume of production that the Serbian wood industry companies will generate in the following ten years, as well as the criterion that excessive market dispersion is not good from the point of view of positioning and winning a considerable market segment.

As regards impregnated products of fir-wood, by establishing strategic partnership with the companies from Austria and Germany, which are the leading ones in Europe in this segment, prerequisites would be created for the manufacturers from Serbia to become their reliable partners in supplying the markets in Europe and a broader area. The possibilities of increasing the level of finishing of the initial material and the export of products with added value, through this type of programme, are almost unlimited.

Product category	Indicator	Country				
		Albania	Bosnia-Herzegovina	Croatia	Macedonia	Slovenia
Wooden windows	Import in USD 1000	368	709	3.333	363	3,691
	Main competitors	Italy Greece	Denmark Poland Slovenia	Hungary B-H Poland	Slovenia Poland Hungary	Hungary Poland Croatia
Wooden doors	Import in USD 1000	1,004	815	11,483	2,444	4,632
	Main competitors	Italy China Greece	Slovenia Poland Germany	B-H Italy Slovenia	Slovenia China Turkey	Germany Poland Croatia
Wooden flooring	Import in USD 1000	714	3,007	3,306	1,064	13,242
	Main competitors	Germany Poland Italy	Croatia Germany Slovenia	Slovenia Germany Poland	China Italy Croatia	Italy China Hungary
Impregnated wood products	Import in USD 1000	868	1,266	5,232	1,789	8,151
	Main competitors	Austria Italy Turkey	Austria Poland Slovenia	Austria Slovenia Germany	Austria Turkey Poland	Austria Germany Italy
Wooden furniture for sitting	Import in USD 1000	2,699	7,010	42,536	6,637	18,691
	Main competitors	Italy Turkey China	Germany China Italy	B-H Italy Germany	Italy Turkey Slovenia	Italy Germany China
Wooden dining-room and other furniture	Import in USD 1000	3,563	22,316	49,967	9,601	25,856
	Main competitors	China Italy Greece	Poland China Italy	Italy Poland Germany	Turkey Italy China	Germany Poland Italy
Wooden sleeping-room furniture	Import in USD 1000	2,550	5,133	20,141	3,398	12,802
	Main competitors	Italy China Turkey	Poland Germany Slovenia	B-H Germany Italy	Turkey Slovenia Italy	Poland B-H China
Wooden accessories	Import in USD 1000	262	436	1,799	157	667
	Main competitors	China Italy Greece	China Slovenia Turkey	China Germany Italy	China Turkey B-H	China Germany Italy

Note: The data on import and the sequence of countries from which the selected products are imported refer to 2015.
Source: National statistics of foreign trade for the selected countries in 2015.

Table 4: Market potentials for the selected product groups in neighbouring countries

Product category	Indicator	Country		
		Germany	France	The Netherlands
Wooden windows	Import in USD 1000	217,427	84,931	44,404
	Main competitors	Denmark Poland Austria	Poland Denmark Austria	Belgium Denmark Hungary
Wooden doors	Import in USD 1000	144,050	77,858	75,756
	Main competitors	Poland Denmark Czech Republic	Germany Italy China	Indonesia Czech Republic Belgium
Wooden flooring	Import in USD 1000	305,110	86,469	71,815
	Main competitors	Austria China Lithuania	Belgium Poland Austria	China Lithuania Indonesia
Impregnated wood products	Import in USD 1000	285,848	202,698	45,640
	Main competitors	Austria Poland Denmark	Germany Poland Italy	Indonesia Malaysia Canada
Wooden furniture for sitting	Import in USD 1000	1,661,683	949,789	330,596
	Main competitors	Poland China Hungary	China Italy Poland	Poland China Romania
Wooden dining-room and other furniture	Import in USD 1000	1,099,085	1,122,976	481,532
	Main competitors	Poland China Denmark	China Italy Belgium	China Belgium Germany
Wooden sleeping-room furniture	Import in USD 1000	585,973	263,772	149,577
	Main competitors	Poland China Denmark	China Poland Denmark	Belgium Germany China
Wooden accessories	Import in USD 1000	92,889	54,199	38,974
	Main competitors	China Vietnam The Netherlands	China Germany Belgium	China Germany Belgium

Note: The data on import and the sequence of countries from which the selected products are imported refer to 2015.

Source: National statistics of foreign trade for the selected countries in 2015.

Table 5: Market potentials of the selected product groups in Germany, France and the Netherlands

Product category	Indicator	Country
		United Arab Emirates
Wooden doors	Import in USD 1000	18,936
	Main competitors	China Italy Portugal
Wooden flooring	Import in USD 1000	16,304
	Main competitors	Italy China Sweden
Impregnated wood products	Import in USD 1000	23,288
	Main competitors	Austria New Zealand China
Wooden furniture for sitting	Import in USD 1000	193,086
	Main competitors	China Italy USA
Wooden dining-room and other furniture	Import in USD 1000	227,356
	Main competitors	China Italy Germany
Wooden sleeping-room furniture	Import in USD 1000	143,005
	Main competitors	China Italy Vietnam
Wooden accessories	Import in USD 1000	8,298
	Main competitors	China Thailand India

Note: The data on import and the sequence of countries from which the selected products are imported refer to 2015. Source: UNECE database

Table 6: Market potential for the selected product groups in the United Arab Emirates

Recommendations for increasing the competitivness of the serbian wood industry

The guidelines, prioritized measures and activities for strengthening competitive potential of the wood industry and particularly the sub-sector for the production of furniture made of wood in Serbia, are determined in this section. In order for the wood industry to become one of the key drivers of sustainable economic development of Serbia, it must increase the efficiency of using the resources as well as the share of products with high added value in the overall production. The goal of the support to this industry is to foster its export competitiveness, so that Serbia could be positioned on the global map of producers of wood furniture, above all. It would boost employment and significantly mitigate development-wise lagging of mountain and rural areas in Serbia which are rich in forest. The proposed measures and activities represent a part of the strategic framework for the development of competitiveness of Serbian economy and they are complementary to the previously adopted documents in this sphere, primarily to the Industry Development Strategy of the Republic of Serbia 2011 - 2020 ("Official Gazette of RS" no. 55/11).

Strengthening of sustainability and competitiveness of manufacturers of wood products with high added value, especially furniture, will be accomplished predominantly through continuous improvement of the key business functions (organization of work, improvement of the procurement process, cost management, sales planning and management and market research, measuring the employees' performance and business planning). This is the condition precedent for achieving sustainable marketing of wood furniture to global markets. Recognizing the importance and significance of external drivers for improving the competitive position of wood furniture manufacturers, these companies above all need to build their own capacities, business and professional skills, in order to use, most effectively, the incentive measures of support for facilitating the access to new markets. Even if the state policy and practice regarding the use of forests were optimal, i.e. if the company had a continuous supply of quality raw material - at stable prices, and if financing was available for private sector for the purchase of modern equipment for furniture manufacturing and if there was trained work force for furniture manufacturing and if business environment was fully conformed to the requirements of the economy, efficient and effective, the wood furniture manufacturing sector would not experience expansion and growth without a considerable improvement of the method of doing business and the companies' internal capacities up to the level where they could compete on equal terms with the companies in the countries that are already the leaders on the global furniture market.

In view of the above, the measures suggested by this strategic document have been systematized in two sections. One defines the guidelines and methodology for improving internal capacities of manufacturers of wood products with high added value, in order to be more competitive on foreign markets, and the other one defines measures for enhancing the overall business ambiance on all levels of government.

Improving the competitiveness of manufacturers for the export of products with high added value

Most of the manufacturers of furniture and other wood products with high added value in the country will find it difficult to reach the productivity level required by the global furniture market. Therefore, all private and public players engaged on the activities of support to the growth and development of the wood furniture sector in Serbia will have to devise and implement a set of conformed activities aimed at improving professional competences in the area of management and business competitiveness of local companies dealing with furniture manufacturing. The recommendations regarding these activities are provided below.

1. Training in the area of business management: Different methods can be used in order to help the companies get trained for a better management of production functions. In any case, such training is of major importance for the sector. Each method of improving the management in the sector involves the engagement of local and international professional sector experts with hands-on experience in the furniture sector. In that sense, **it is necessary to set up a working group comprised of the experts from the sector and the area of business development, who would recommend the most efficient method of providing professional services to the companies in the area of improving the management, which is prerequisite for further development of business operations. In majority of cases, the training modules will be defined for the groups of companies experiencing the same problems, but it is possible to provide specialized trainings as well, and consultations with individual companies, where applicable.**

The areas of consultancy trainings in management should include the topics below, where common problems in the operations of the Serbian furniture manufacturers have already been observed:

a. *Calculation of costs and prices*: Few manufacturers are adept in the cost calculation methodology for specific stages and processes of production. In order to be competitive on foreign markets, it is necessary to become skilled in precise cost calculation for several reasons: in order to identify and enhance non-efficient production segments, whereby the company becomes cost-wise and consequently price-wise competitive, and in order to establish the cost structure which is transparent to potential buyers. The training and consulting in the field of ***cost engineering*** are of vital importance for the company. The companies will have to know how to improve efficiency of utilising raw materials, how to optimize the production processes with high return on investments and to discard the products with low return on investment ("SKU"– product catalogue number), and how to calculate the costs of using the equipment and machinery.

b. *Strategies for cost-effective procurement of raw material*: It is necessary for the companies to learn how to define an optimal combination of all elements in the supply chain, including the reduction of logistics costs to minimum. In order to do that, they are required to be knowledgeable of all options in the supply chain and possibilities and methods of applying creative solutions for the cost reduction in the procurement of raw material.

c. *Quality control*: Obviously, a large number of Serbian manufacturers lack the established systems for strict monitoring of quality standards and reporting. Quality control is necessary for the production of identical products without errors and for the purpose of identifying and removing the problems in production affecting the quality, owing to feedback and control. This is even more important when the furniture is dispatched to great distances (as is the case with export). In this case, the quality gets more important, as the costs of complaints and removing derogations from the contracted quality inflate logarithmically with the increase of distance from the place of the dispatch. In order for the industry to become successful, specific training in the sphere of quality control should be ensured, in a form of a set of training tools dedicated to specific types of manufacturers.

d. *Distribution of equipment and work posts in the plant, production flow, process management*: Many small and medium-sized furniture factories in Serbia have an organization of work posts and equipment in the plant that is not optimal, which is why the production flow is not efficient either. Besides, many factories depend on the machinery that are fully depreciated, yet still in operation. In addition, there are numerous cases where the existing equipment is under-deployed. Although this is a part of cost engineering, training in the field of process management, distribution in the production plant and the production flow would help the manufacturers organize the production and make cost savings and optimize the plant capacities. Training in the field of cost engineering may include the possibilities of costs savings by sub-contracting a stage in the production process. Specialized sub-contractors can be more efficient in some operations. Likewise, it is possible to organize a shared use of the equipment that is necessary to all manufacturers, but only sporadically used.

e. *Inventory management*: Inventory management is a measure related to efficiency, whereby a manufacturer tries to continuously conform the availability of raw material to production requirements. Excessive inventories in a long run cost too much, while insufficient inventories bring costly delays and missed orders. The companies must bring the inventory management to close-to-perfect level, as there are management techniques and support tactics to accomplish that. In Serbia, one of the crucial costs related to inventory of a furniture manufacturer is linked to natural drying of lumber. Manufacturers must order and immediately pay the raw material, and they cannot use it straight away in the production, as the lumber needs to be naturally dried for several months. The period of natural drying period varies depending on the type of tree, the thickness of lumber, season's climate conditions and target level of moisture). The inventory turnover ratio (Days Inventories Out) largely influences the duration of the company's business cycle, the product price and accordingly its competitiveness and final balance sheet and profit and loss accounts. This is a problem that almost all manufacturers in Serbia are faced with as few companies offer drying services.

2. Marketing management. Companies must acquire the skill of recognizing the demand trends, they have to adjust the design and models of furniture to market trends, to understand the market expectations, to schedule and implement realistic and development-oriented marketing goals and manage the marketing accordingly. Currently, manufacturers in the Serbian furniture sector mainly do not demonstrate such skills. Marketing strategies based on an analysis of the market and its requirements are quite rare, and the companies usually strive to implement short-term *ad hoc* sales goals, and they do not conduct targeted and multi-phased marketing procedures. Connecting of marketing orientation and skills on the company level will call for different approaches, including consultations as per requirements of individual companies, group consultations and meetings within the sector and discussion, altogether aimed at the development of a set of practical and efficient models of marketing behaviours and activities that will ensure a sustainable sale to individual firms and the furniture sector as a whole. **It is recommended that a working group be set up, comprised of experts in the sector and experts for the development of business, in order to suggest the best combination of tools for connecting marketing orientation and manufacturers' skills. These tools should help eliminate the critical marketing deficiencies in the Serbian furniture sector.**

a. *Familiarity with the export market*: A prerequisite for building up and developing a dynamic wood sector is that the critical number of individual companies in the sector realize the mentality and requirements of global customers of wood furniture and adopt the strategies designed to accommodate such customers' needs. Implementation of these strategies will involve research, innovation, flexibility and some sales approaches that are probably different and more demanding compared to the standard practice pursued by manufacturers in Serbia. Four priority areas are set out that will enable a customized approach to foreign markets.

- *Design*: The manufacturers who want to export will have to understand the customer's taste and needs on a target market, and they can differ much from those in Serbia. Therefore, it will be necessary to carry out a research by visiting fairs and discussing with customers even before launching a sales campaign. Manufacturers will have to define the strategy and specify the type of the desired customer, retail or other manufacturers and to understand what is required by either alternative. Manufacturers will then have to be capable of designing and making a product that foreign customers will want to have, and that can be sold at the price which yields a satisfactory profit, and which suits customers and manufacturers alike. This will include a type of management team who closely links those in charge of sales promotion with the production plants in Serbia. General and specialized consulting should be available for enhancing the marketing strategy and managerial skills.

Regulations: Manufacturers must be thoroughly familiar and must actively apply all regulatory provisions on the target markets (particularly EU). This will, of course, impact the aforementioned functions in the production process, such as the choice of the raw material, the quality control process, the information stated on declarations and packaging, the country of origin of the raw material, etc.

- *Harmonizing the companies' operations with the EU regulative*: Although the greatest number of state-owned forests in Serbia has a FSC certificate (Sustainable Forest Management Certificate), in the near future, furniture manufacturers will be also expected to be FSC certified (Chain of Custody Certification). For exporters, it will not be enough to simply state how they procure wood from a supplier with FSC certificate, as serious EU retail stores will expect the supplier to prove that the entire wood supply chain is FSC certified whereby it is proved that the wood originating from certified suppliers or parts of the chain is not (and cannot possibly be) mixed with the wood coming from non-certified suppliers or processors.

Legality of business and social responsibility: local manufacturers must be able to pass a serious safety control of their products and social responsibility, which is part of a due diligence. Manufacturers must realize that it is only the question of time when such audits will be required and they must start organizing their production and business activities in line with EUTR and other regulations.

b. *Sale – negotiations and customer service*: Marketing strategy, which has been already briefly addressed, is the direction in which the company would like to move in order to find business opportunities. Distribution of products is actually the implementation of marketing that consists of expanding the sale and the existing scope of operations. In order to create a sustainable and strong wood furniture sector, export-oriented, the sales force will have to: work on the international market using foreign languages; be incentivized to contribute to increased sale, harness negotiating skills and possess certain level of delegated authority in the negotiating process. The key segment of the sale is also the introduction of customer service. So, the company must adopt and maintain the mechanisms of responding without delay in terms of providing assistance to customers in negotiations and also providing the services even to remotely located customers after the sale has been completed.

c. *Customer approach*: An obstacle for the Serbian furniture manufacturers without sustainable export-oriented operations on the global market is a sporadic and non-systematised approach to international customers. Short-term (5 years) approach is to assist wood furniture manufacturers to establish their presence and gain reputation on international market that should be devised and financed by the advocates of this initiative in the field of wood furniture. Fairs (international and local ones, the Belgrade Fair) and commercial missions, as the joint efforts of the Government and donors on reinforcing Serbia's position of an exporter in the wood industry sector will be required as a part of pro-active approach. **Yet,the prerequisite for this type of marketing is that all the aforementioned management steps on the company level must be considered and applied concurrently with such marketing, at the latest.** If a demanding customer orders a product in accordance with his/her standards, and is supplied with a product of inadequate quality, which used to happen in the past, it may have serious and far-reaching negative effects not only upon the manufacturer concerned, but also upon the reputation of the entire industry on key export markets.

Area A

Contribution to increasing the degree of finalization of the raw material and change of the existing spatial distribution of production in accordance with the level of forest cover within certain regions

Distribution and better valorisation of the wood raw material will be done within this area, with the ultimate goal to develop the entire chain of supply of the Serbian wood industry with the improved mechanisms of control, transparency of wood raw material flows and implementation of regulations. At this moment, the forestry sector is within the competence of the Forestry Administration while the wood industry sector does not have the competent institution and representation within the Ministry of Agriculture and Environmental Protection nor with the Ministry of Economy. As the competitiveness of local wood industry depends, to large extent, on the adequate allocation of raw material, we will briefly address, in this introductory part, the importance of existence of a synergy between these two sectors. At this point, instead of being an advantage, domestic raw material resources are increasingly becoming the subject of dispute between the forestry and wood industry. Domestic raw material resources that Serbia has at its disposal, particularly in deciduous trees, can turn into weaknesses unless used comprehensively and effectively. Support cannot be extended on several levels, starting from subsidizing the programme of forestation by fine deciduous and coniferous trees on the state-owned land, and on private property on national, provincial and local level, to arranging communal and road infrastructure as a support to the sectors of wood industry and forestry (developing the cadastre of forest roads, extending the network of forest roads in order to facilitate management conditions in state-owned and private forests, more active utilisation of EU funds and other available models and sources of financing for improving the forest roads, modernization of forest machinery for the purpose of more efficient and environmentally sustainable logging, ensuring a consistent monitoring of the implementation of rehabilitation plans to remedy the damages caused by fires and ice in state and private ownership - currently, the term of rehabilitation of damages caused by fires and ice has been shifted from 3 to 5 years). Initiating discussions and coordination of activities between the forestry and wood industry sectors is one of the first steps. Inclusion and more intensive cooperation with local self-governments in forestation, rehabilitation of forests after the damages caused by fires and ice is yet another opportunity for extending the cooperation between two dependent sectors on several levels of government.

The fact that currently only 48% of industrial round wood in Serbia is used for manufacturing the products with high added value, whereas the rest is used for the production and export of products with low added value (mostly as lumber), shows that domestic raw material resources are not most effectively used. The future model of wood sale in Serbia should create conditions for the implementation of SRPS EN standard for round wood in practice, primarily in the segments of using forests, sale and trade in wood. It is necessary to introduce transparent monitoring and supervision over the chain of production and processing of wood raw material from logging to final products, such as the introduction of software solutions for managing the flows of raw material.

Along with the development of a new sales model, conditions should be created for deploying the wood raw material from private forests for industrial needs and increasing its share in the supply chain of the wood industry. As a consequence of using the raw material from non-certified forests and the inability to obtain wood certificate originating from private forests, manufacturers and exporters of products made of such wood are being increasingly faced with the problem of marketing their products on foreign markets. The situation is additionally aggravated by a new EUTR regulation (timber regulation) No.995 which came into force on 3 March 2013, which stipulates a set of conditions that wood and wood product distributors should fulfil when marketing the same to the EU market.

Proposed goals and measures:

AREA A	Contribution to increasing the degree of finalization of the raw material and change of the existing spatial distribution of production in accordance with the level of forest cover within certain regions	
A1	Improvements of the offer of the higher quality raw material and mobilization of additional quantities of raw material in accordance with the management plan	
	Activity	Indicator
1.1.	Improve the control of wood raw material flows for the purpose of preventing the trade in illegally logged wood raw material	Tradeable wood raw material has a transparent and provable origin
1.2.	Continue with the activities aiming improvement of production of timber using the new standards, the training of workers in the cutting and making assortments	Production of wood products is carried out according to the applicable SRPS EN standards
1.3	Inclusion in the existing sales model a new quantities of raw material that can be encountered as a result of increased utilization of the annual cut in some regions	Available additional quantities of quality raw material
1.4.	Compilation of a catalogue including a description of classes and dimensions of wood assortments	The catalogue of wood assortments is complete.
A2	Deployment of the wood raw material from private forests in order to manufacture the products with the highest possible added value	
	Activity	Indicator
2.1.	Increasing the level of accessibility of private forests through the support of the state and local self-governments for constructing forest roads	A growth of technical wood quantities on the market, offered from privately owned forests
2.2.	Creating the programs of education for private forest owners about the importance of sustainable forest management	Education programs established
2.3	Training of private forest owners and staff for logging activities and preparation of wood assortments in accordance with the relevant log-related standards	The number of trainings for private forest owners and work force engaged on logging activities and preparation of wood assortments
2.4.	Incentivizing the support program for private forest certification, along with promoting the importance of and benefits from certification by networking the private forest owners in associations that possess capacities to implement all certification-based activities	The area of certified forests in private ownership

Area B

Encouraging export-oriented production of wood products with the highest level of processing by strengthening the production capacities, technological advancement and provision of technical and expert support;

The main purpose of the proposed measures and goals in this area pertains to the creation of conditions for boosting the competitiveness of the Serbian wood industry.

That process requires a systemic support by institutions, which also involves improvement of regulation in order to create prerequisites for a stronger budgetary support to developmental programmes of the Serbian wood industry. The majority of products which are "attractive on major export markets" predominantly represent models of foreign companies which commission the export. That is why it is necessary to invest in the development of new domestic products which Serbia could become regionally and broadly recognized for. That would create the starting point for branding the Serbian wood products with high added value. The first step is the development of domestic design which will represent, along with the application of innovation in the sphere of constructing and selecting the material, the starting point for programme-wise restructuring of the wood industry and the development of Serbian brand for specific categories of furniture and other wood products with high added value.

A prerequisite for implementing new designer solutions is the availability of technological equipment. With the exception of few companies that are technologically well equipped, technological capacities of majority of companies is suboptimal. The products created by applying the outdated technology can only be marketed in neighbouring countries that still do not have high requirements regarding the quality and precision of make, tolerance, supra-measures and other wood-processing criteria.

The development of the "core business" concept imposes the need to set up clusters of competitiveness of the wood industry sector, establishment of a chain of suppliers therein, for the leading companies, and integration of certain number of small and medium-sized enterprises in that chain. In that way, small and medium-sized manufacturers would become specialized in the production of specific components (elements) of the products with higher level of finish compared to the existing production (mostly comprised of lumber and elements). These companies would thus become reliable suppliers of the leading domestic finishers, they would increase the level of finishing of the wood raw material they process, they would achieve better financial results in their operations versus the existing ones, and the wood raw material currently exported in a form of lumber and elements would be completely finished in Serbia and marketed to domestic market or exported in the form of finished products. Special activities within the competitiveness cluster will be the commitment to building up the professional image of small and medium-sized enterprises, as the owner, rather than the enterprise itself, is the image-keeper and his name represents the reputational value in the largest number of small and medium-sized enterprises. In that regard, it is necessary to gradually transfer the reputational value from the owner to the enterprise.

Proposed goals and measures:

AREA B	Incentivizing export-oriented production of wood products with the highest level of finishing by strengthening the production capacities, technological improvements and provision of technical and expert support	
B.1	Strategic commitment of the Serbian Government to support the wood-processing sector is of vital importance for economic development	
	Activity	Indicator
1.1.	Preparation of the national sectoral strategy that will ensure support by all levels of government and institutions for the development of the wood industry;	The Development Strategy and the Operating programme for the development of the Serbian wood industry
		Sectoral strategies on local and regional level have been prepared, including a gap analysis of the existing regional and local value chains with recommendations for their improvement
1.2.	Establish a mechanism of support on local and regional level for incentivizing small and medium-sized manufacturers to provide specialized services to leading companies and exporters of the wood products with the highest level of added value	Regions and local self-governments have been identified, by way of economic analyses, where the wood-processing sector is one of the three with highest opportunity for growth and employment
1.3.	By amending the Public Procurement Act or by adopting a by-law regulation (the Rules on implementing the procedures of "green public procurements") commit all ordering parties to adopt annual plans for increasing the scope of "green procurements" and to publicly announce their reports on the accomplishment of these projected goals.	The Rules on Implementing the Procedures of "Green Public Procurements" has been adopted
1.4.	Creating a state programme for revitalizing brown-field locations (on the state and local level) for the purpose of putting into operation or expanding the production of the products having the highest finishing level in the wood industry sector	Increased offer of available office space on local level in the function of expanding the capacity of production with the highest added value in the wood industry sector.
B.2	Create institutional mechanisms of formal and informal communication between the wood industry, competent institutions and public sector	
	Activity	Indicator
2.1.	Establishing the Wood Industry Administration within the Ministry of Agriculture or the Ministry of Economy	The Directorate within the Ministry of agricuture has been established
2.2.	Initiate drafting an umbrella legislation for the wood sector	The Law on Wood Sector has been endorsed
2.3.	Set up a working group for monitoring the Action Plan implementation	A working body has been set up (LED Office, DAS, Serbian Chamber of Commerce and Industry (SCCI), Regional Development Agencies, Regional Chambers of Commerce, businessmen, representatives of educational institutions)
2.4.	Create an institutional mechanism for the collection, verification and free access to information related to the wood industry and its products	The database on companies, entrepreneurs, wood products, production and trade balans data has been integrated
B.3	Support to exporters and upgrading the export boosting measures	
	Activity	Indicator
3.1.	Establishment of the Serbian wood industry consortium and creation of support programmes for the specialization of central and local institutions for targeted increase in the export of wood industry and its positioning as regional and global market supplier with the high added value products.	The Serbian wood industry consortium has been established and the relevant support programmes accordingly.

AREA B	Incentivizing export-oriented production of wood products with the highest level of finishing by strengthening the production capacities, technological improvements and provision of technical and expert support	
B.3	Support to exporters and upgrading the export boosting measures	
	Aktivnost	Pokazatelj
3.2	Creation of support programmes for product development, market research, development of distribution channels for high added value products that are exported to selected target markets, and support programmes for the companies dealing with facility furnishing (contracting) (hotels, institutions, commercial facilities),	Support programmes for strengthening the Serbian wood industry competitiveness have been created.
3.3.	Creation of support programmes for financial restructuring of the companies exporting final wood products, as well as the programmes of credit incentives for the development of SMEs located in the chain of supply of the companies exporting the wood products with high added value	The programmes of granting loans to companies under more favourable terms have been established.
3.4.	Creation of incentive measures for technological modernization, enhancement of manufacturing products of the highest processing level and export (preparation of presentations and product promotions, participation at fairs or individual events)	In the 2017 Budget, the funds have been allocated for financial support and subsidies for manufacturers and exporters of the products with high added value
3.5.	Creation of support measures for the exporters of furniture and wood products with high level of finishing in terms of consultancy services, professional training of staff, testing their product in authorized labs in the country and abroad and recognizing such attestations and certificates by the institutions (customs, ministries) of the countries whose markets the final products from Serbia are exported to.	Standardization of professional and technical support by formal institutions to wood-processing companies for the purpose of strengthening internal capacities and production
3.6.	Support to networking of small wood-processing companies for the purpose of diversification and reduced costs of investment in the creation of a new common value chain.	Local and regional analyses of the wood industry's requirements on these levels have been conducted (premises, equipment, staff, etc.)
		The programme for incentivizing the manufacturers and exporters for the integration in the value chain and cooperation has been created, in order to achieve a higher level of finishing and volume of production.
		The programme of support measures to inter-sectoral economic cooperation has been created
		Decisions and study visits have been implemented for the companies and entrepreneurs with lower level of processing, for the purpose of strengthening their professional capacities and integration in the relevant value chains
		Compilation of a register of manufacturers of furniture and other products with high added value on local and regional levels, which are integrated in the relevant value chains for the needs of the wood industry
		Development of an inventory of technological capacities of processors on local and regional levels

AREA B	Incentivizing export-oriented production of wood products with the highest level of finishing by strengthening the production capacities, technological improvements and provision of technical and expert support	
B.4	Support to creation of new innovative wood products, innovative management models and organization of the production process with the goal to increase export	
	Activity	Indicator
4.1.	The development of innovative wood product designs with high added value and establishing sustainable innovation centres	A study on the requirements and methods of establishing innovation centres has been completed
		Improved quality and image of the wood products with high added value through investments in the development of design and application of innovative solutions
4.2.	Development of programmes for measuring the effects of all created and implemented programmes with the incentive measures for enhancing the competitiveness of the Serbian wood industry	Programmes have been developed for measuring the effects of all created and implemented programmes
4.3.	Support to the local exporters of furniture and other wood products of a high level of finalization in improving distribution channels of their products on local and foreingh markets	Growth of export, price and competitiveness of wood products from Serbia within targeted export markets

Area C
Improvement of tertiary, secondary and vocational education and professional training in accordance with the economy's requirements

Strengthening the competitiveness of the local wood industry implies also a better connection between the education system and economy so that the education system and the labour market could swiftly respond to its demands. Given the fact that the requirements of the industry for professional staff, their know-how and skills change much faster nowadays than it was the case twenty or more years ago, the conformity of the education system to economic requirements is presently needed more than ever. Such conformity comprehends a joint development of curriculum for specific disciplines.

Based on the identified weaknesses and shortcomings in the education system in the foregoing items of this document, below are presented the measures for enhancing and improving the conditions in the education system which trains staff for the needs of the wood industry. Without quality staff, it is not possible to have changes and rapid development. The existing problems related to wood processing, regimes and accuracy levels, supra-measures, tolerance, ignorance of standards etc., are to largest extent the result of inadequate competence of the staff leading the production processes in majority of companies. Many of them do not possess fundamental qualifications for performing the tasks in the wood-related technological processes as they have not completed the schools that educate staff for the needs of the wood industry. Bearing in mind the complexity of situation in this area, this segment of the proposed measure must gain momentum and special attention should be devoted to it.

Before commencing the implementation of the dual education concept in all vocational schools for training staff for the needs of the wood industry, it is necessary to jointly draft the protocol and rules to streamline the activities. In drafting the rules, it is necessary to ensure an active involvement of secondary vocational schools, local self-governments, the representatives of the Ministry of Education and the companies from the wood industry. It is necessary to envisage the modes of granting scholarships to students by local self-governments and the industry, the measures of active promotion of employment in local wood-processing companies upon the completion of schooling, symbolic remuneration for the work performed during the professional practice to be paid by the company, and those are just a few of prerequisites to work jointly upon in order for this concept to succeed in practice. The National Employment Service and its branches should be included in the entire process, in order to develop re-qualification and additional qualification programmes for staff with the representatives of local self-governments and wood industry companies, in accordance with the requirements of the industry.

For the purpose of strengthening competitiveness and conquering new markets for the needs of the Serbian wood industry, a centre for industrial design and a centre for management of furniture and wood product export will be set up at the Faculty of Forestry in Belgrade. The Government will also assist the establishment and accreditation of new laboratories for scientific research and testing of wood products with the goal to receive an attestation and certificates as are required in the export of Serbian wood products to specific markets. In addition, permanent education and professional advancement of the teaching staff, study visits to fairs, professional conferences and exchange of the acquired knowledge with the representatives of economy are an important condition for this initiative's success.

Proposed goals and measures:

AREA C	Improvement of tertiary, secondary vocational education and professional training in line with the industry requirements and employment support measures	
C.1	Harmonize the education system on all levels with the Serbian wood industry requirements	
	Activity	Indicator
1.1.	Make an analysis of the wood industry requirements with regard to professional staff from secondary and tertiary education, as well as mid-term and long-term projections of the work force demand	Relative to the analysis of conditions in secondary vocational schools, the profiles in the wood-processing industry should be strategically set
		The curricula have been harmonized with the industry trends and new technology development
1.2.	Involving the private sector in the work of the sectoral Council to produce NOK (National Qualifications Framework)	Qualification standards developed in accordance with the needs of the private sector
1.3	Support to the introduction of pilot classes according to the dual education principles for schooling staff in secondary vocational schools of the wood-industry professions	The number of pilot classes that school staff according to the dual education principles
1.4.	Drafting of new Rules on conducting professional practice on all levels of education, redefining the existing rights and obligations of pupils and students, but also of companies during the professional training	The rules on performing professional practice has been completed
1.5.	Create a programme of lifelong education and professional development of the employed staff on all levels of education for the needs of the wood industry	Regular sharing of acquired knowledge and experience among businessmen, professors and LED Office representatives

<table>
<tr><td>AREA
C</td><td colspan="2">Improvement of tertiary, secondary vocational education and professional training in line with the industry requirements and employment support measures</td></tr>
<tr><td rowspan="2">C.2</td><td colspan="2">Support to strengthening of the Serbian wood industry competitiveness on the existing markets and conquering of new markets</td></tr>
<tr><td>Activity</td><td>Indicator</td></tr>
<tr><td>2.1</td><td>Setting up a Centre for industrial design of furniture and wood products</td><td>The Centre has been established.</td></tr>
<tr><td>2.2</td><td>Setting up a Centre for the management of export of furniture and wood products</td><td>The Centre has been established.</td></tr>
<tr><td rowspan="2">C.3</td><td colspan="2">Podrška jačanju konkurentnosti drvne industrije Srbije na postojećim i osvajanju novih tržišta</td></tr>
<tr><td>Activity</td><td>Indicator</td></tr>
<tr><td rowspan="2">3.1</td><td rowspan="2">Defining of regional measures of active employment policy in accordance with the industry requirements in the region concerned, while introducing the practice of organizing info days devoted to parents about the importance of the industry, sector and encouraging children to be educated in that area.</td><td>Relations between business associations and educational institutions arranged and the number of concluded contracts</td></tr>
<tr><td>Active promotion of retraining mechanism as a model for meeting the needs of the private sector for specific profiles</td></tr>
<tr><td>3.2</td><td>Creating and implementing the training programmes of career consulting and guidance with a sectoral approach in elementary and secondary schools (supported by LED Office, the Youth Office, National Employment Service).</td><td>Created and implemented programs of career guidance and counseling with sector targeting</td></tr>
<tr><td rowspan="4">3.3.</td><td rowspan="4">Preparation of a draft combined model of incentives by local self-governments which would contribute to enticing young persons to enrol in secondary vocational schools</td><td>"Combined incentives and benefits for the access to secondary vocational schools have been introduced
(scholarships, dorms, transport, student’s salary) on all levels
"</td></tr>
<tr><td>Revising the programme of local employment subsidies with a focus on production activities, and wood-processing industry as well (the situations such that these programmes cover only public works and self-employment)</td></tr>
<tr><td>"Training of LED Office and Local Employment Councils to apply
a sectoral principle in defining the employability growth
measures
"</td></tr>
<tr><td>"Revising the programme of subsidizing employment with
a focus on production-based activities
"</td></tr>
<tr><td>3.4.</td><td>Support to pupils, students and professors for visiting fairs, study visits, to get familiar with the trends in design, technology, etc.</td><td>The number of support programmes</td></tr>
<tr><td>3.5.</td><td>Improving and intensifying the cooperation between the representatives of the industry, faculties and secondary vocational schools in promoting the wood industry professions</td><td>Setting up a media pool of the Serbian wood industry</td></tr>
<tr><td>3.6.</td><td>Through cooperation of the private and the public sector, creating the local CSR programmes with the goal to promote and support sustainable development of the sector</td><td></td></tr>
</table>

Area D

Promotion of Serbia as a country exporting the solid wood furniture and other wood products with a high added value

One of the ways to make the entire sector more visible, and thus receive adequate attention when planning the public policy measures, and also advocating the incentive support measures in a broad area of institutional action, is to set up, within the Ministry of Agriculture and Environmental Protection or the Ministry of Economy, a separate organizational unit – Wood Industry Administration. However, for the entire system to be made operational to the level of end user, it is required to develop and/or strengthen the existing institutions for a dialogue between the private and public sectors. Likewise, additional analyses are required as to the method of helping manufacturers on foreign markets. When the wood industry sector is positioned in this manner, a message will be communicated about the importance and strategic commitment of the state for growth and development, and also for specialization and targeted sector support.

Even before it takes place, it is necessary to help the industry and restore Serbia on the map of producers and suppliers of wood furniture, above all. Apart from the need for Serbia to specialize in the production, it is necessary to work on the development of Serbia's visual identity as a state where high-quality furniture and other wood products are produced.

Bearing in mind the importance of product recognisability for market success, as well as the fact that in this segment wood products from Serbia have almost no result, it is important to lay emphasis on promotional campaigns and branding of the Serbian wood industry. Advertising as an element of promotion is usually considered an expense, whereas other types of promotion are most often unknown to majority of companies. In order to change such an approach, promotional campaigns should be launched in order to create the image and positive experience among consumers as regards the Serbian wood products on local and main export markets.

Proposed goals and measures:

AREA D	Promoting Serbia as a country exporting solid wood furniture and other wood products with a high added value	
D.1	Promoting Serbia as a country exporting solid wood furniture and other wood products with a high added value	
	Activity	Indicator
1.1.	Preparation and implementation of a marketing strategy of Serbia, as a country exporting wood furniture	The marketing strategy prepared.
		Support measures created for participation at the most current international fairs of furniture and other products with high added value
1.2.	Branding the products and development of a modern visual identity for the export wood products from Serbia and a joint entrance on foreign markets	The strategy of branding the furniture and wood products with high added value, inclusive of an operative plan
1.3	Introduction of an innovative fair concept and programme-based content of the Belgrade Furniture Fair by applying a B2B concept	A package of benefits and incentives has prepared for participation of foreign customers at the Belgrade Furniture Fair
1.4.	Selection of new potential markets and development of strategic support measures in marketing the products with high added value from Serbia to such markets	Support measures developed for marketing the wood products from Serbia on potentially new markets
1.5.	Establishment and development of a strategic partnership between local institutions and the institutions in the selected countries that represent strategic export markets for the Serbian wood products	"In 2017, minimum two strategic partnerships created "

Conclusions

The adoption and successful implementation of measures proposed in this Action Plan will contribute to the wood industry in Serbia 2022:

- is economically successful and profitable industrial branch that is competitive and exporting over 700 million USD, and which will represent over 60% of its GDP, but in its value over 2/3 of products will consists of high-level finalization.
- surplus in foreign trade of 500 million USD and as such contributes significantly to reducing the country's foreign trade deficit;
- employs at least 37.000 workers;
- be restructured and harmonized with the available raw material resources, with modern programs of specialized products that will boost competitiveness and enable the successful placement on the domestic and foreign markets;
- its main pillar consists of big companies that represent local and regional leaders, within the Consortium and associated with small and medium business companies as well as domestic suppliers, government institutions, banks, insurance companies and other organizations of importance for its development;
- gives a solid foundation for continued investments, employment and growth;
- be even more attractive for investors and young professional staff because it grew from the labour intensive sectors to knowledge-intensive industry, which is market-oriented.

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Serbian wood industry represents an industry with a series of comparative advantages compared to other industries with special emphasis on the local raw material base on the potential of which its production is based. By the end of 2014 there were 2,540 active companies within the Serbian wood industry out of which 1,786 were dealing with wood processing and 754 companies were producing furniture. If you add to that number the 1,593 active entrepreneurs then the number of active economic entities in the Serbian wood industry amounted to 4,133 by the end of 2014.

The total number of people employed in the Serbian wood industry at the beginning of 2015 was 22,711 out of which 9,234 in wood processing companies and 11,717 in furniture production. Within the registered entrepreneurs category there were 1,760 employees. In 2014 it accounted for 1.72% of the total number of employees i.e. 8.13% in the processing industry of Serbia. According to this parameter, **the wood industry was ranked at third place** right behind the food production (49,727 workers) and production of metal products (28,437 workers).

The results the wood industry achieved in 2014 show that its share in the gross domestic product of Serbia was 1.55%. **With export worth USD 363.7 million the wood industry's share in the total Serbian export was 2.72%.** Wood processing export structure is dominated by products with lower added value. The share of floors and construction joinery as high added value products in 2015 was merely 26% compared to the total export of processed wood while the products with lower added value accounted for 74%. The furniture export was dominated by sitting furniture with the 31% share in the total value of wood furniture export (USD 161 million).

Analyses and calculations for the flow of wood and wood products in Serbia for 2015 showed that **only 48% of the total produced amount of deciduous hardware-processed into high added value products and 52% are exported as low added value products:** export of logs (4%), export of lumber (41%) and export of other low added value products. That is why the value of wood products export per employee is relatively low. In 2014 it amounted to 18,291 USD/worker and was considerably lower compared to Croatia and Bosnia and Herzegovina. Compared to developed EU countries this indicator is several times lower. **With such a small quantity of wood raw material that is being finalized, at this moment Serbia cannot be seen as a serious supplier of European or global market with high added value products.**

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