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# **ANALYSIS OF THE AVAILABLE WORKING FORCE IN WOOD PROCESSING INDUSTRY COMPARED WITH THE INDUSTRY NEEDS -SUMMARY-**

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Zenica, November 2005

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## EXECUTIVE SUMMARY

### a) ANALYSIS OF THE CURRENT NUMBER AND STRUCTURE OF EMPLOYEES IN WOOD PROCESSING SECTOR IN FBiH

- According to the data of the Federal Statistics Bureau, in October 2005, there were 13,281 workers employed in the wood processing sector
- In October 2005, there were 4,767 employees working in furniture production industry, and in other wood processing industries, there were 8,514 workers employed.
- In the period between 1999 and 2004, continuous fall in the number of employees was recorded in the wood processing industry. In 1999, there were 17,035 workers employed, which was 3,434 more than in 2004.
- The first increase in the number of employees was recorded in 2005 in the furniture production industry; however, the total number of the employed in wood industry was still in its fall.
- The survey accounts for 37% of the total number of employees in wood industry in FBiH
- Average number of employees in the companies covered in this survey is 49 workers.
- In sole crafts shops, there are 3 workers employed at average, in limited liability companies – 25 workers, and in joint stock companies - 258 workers.
- In production of solid wood furniture, there are 120 workers employed at average, followed by sawmilling with 52 workers at average and production of board furniture with average number of 48 workers employed.
- The smallest number of employees is found in production of construction joinery (17 workers at average) and production of other wood products (16 workers at average).
- According to the data of the Federal Statistics Bureau for 2004, with respect to qualification structure of employees in wood processing sector, almost one third of employees are skilled workers, one fourth of employees has high school education, while there are only 2% of highly skilled workers in the total number of employees.
- Age structure of the employees in wood processing companies is favorable because more than one fourth of the employees is below 30 years of age
- Out of total number of employees, women make 14% of workers employed. The main reason for this proportion between women and men is that wood industry often requires physical strength and it is perceived as a typical male industry. Women mostly hold positions in administration and perform the jobs of packaging and cleaning.

### b) OVERVIEW OF QUALIFICATION STRUCTURE OF EMPLOYEES IN WOOD PROCESSING SECTOR WITH RESPECT TO MAIN BUSINESS ACTIVITY

- The employed in wood processing sector are equally allocated with respect to their age and sex within subcategories of the wood processing industry.
- Insignificant diversity exists in the production of furniture where there is the largest number of women above 51 years of age in comparison with other wood processing business activities, as well as men below 50 years of age.
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### c) ASSESSMENT OF THE CURRENT REQUIREMENTS FOR PERSONNEL IN THE WOOD PROCESSING SECTOR

- The companies dealing with furniture production identified personnel as their top requirement (approximately 40% of all requirements identified in the furniture production). The least personnel requirement was expressed in the construction joinery production where every third company requires new personnel.
- According to the data of the Federal Statistics Bureau, the top profession in the wood processing sector is “carpenter” (i.e. 49% of all personnel requirements identified in the furniture production).
- The requirements for highly qualified work force are proportional to the structure of the employees in which these employees account for 2% of the total number of employees.
- The companies dealing with construction joinery production have assessed twice as big personnel requirements over the next five years in comparison with the current requirements.
- Only in manufacturing of other wood products, the requirements for hiring qualified work force in the near future were smaller in comparison with the current situation.
- The companies from the area of furniture manufacturing identified their requirements for new workers in the near future in 59% of cases.

### d) ANALYSIS OF HIGH SCHOOL CURRICULA IN WOOD PROCESSING HIGH SCHOOLS IN COMPARISON WITH THE REQUIREMENTS OF COMPANIES

- In Bosnia and Herzegovina, the high school education reform is currently in force in accordance with the Copenhagen Declaration and it is undergoing at 12 governmental levels (the Cantons in FBiH, RS and Brcko District).
- Among the first ones to become active in the high school education reform in wood processing sector was the German Society for Technical Cooperation - GTZ, and subsequently, the European Union joined, initially with its PHARE VET program and then with its program for Vocational Education and Training (EU VET).
- The standardization process in the area of job classification is underway along the reform process. In Bosnia and Herzegovina, currently there are four different job classifications that are being applied. None of them proved to be completely adequate and the link between education and economy is very weak or non-existent. In addition, things get even more complicated because of diversity and incompatibility of the classifications and categories in a small area and on approximately 70% of the total number of citizens, what is the number of people with working ability and those who are between 15 and 64 years old.
- The German Society for Technical Cooperation - GTZ, as an aggregate objective of its activities in the process of high school vocational education, stated increase in the number of final year students in the high vocational schools
- The project support in vocational education reflects in the following:
  - Development of new, updated curricula and syllabi oriented to working processes and the necessary skills;
  - Training of trainers in modern teaching methods as well as in professional specialization and linking theory with practice;
  - Implementation of concepts and methods for improvement of vocational training in quality management
- The German Society for Technical Cooperation - GTZ, as an aggregate objective of its activities included six schools from Bosnia and Herzegovina and none is from the area of Central BiH.
- The GTZ project covers almost all technical professions from the area of wood processing save for the profession “carpenter”.
- The purpose of the EU program for vocational education and training (EU VET) (2002-2004) is to support development of a modern, flexible and high-quality system of vocational

education and training in BiH which meets the requirements of the labor market and is well connected with basic, general high school and higher school educational systems based on the principles of life long learning.

- The EU-VET activities can be divided into the following categories:
  - Requirements of the labor market for training and providing relevant education and training;
  - Continuation of reforms and implementation of curricula and syllabi and
  - Development of policy and strategy including the activities of VET Agency for standards and evaluation
- In terms of wood processing vocations, EU VET II includes the profession Carpenter.
- The Project EU VET II includes 134 schools in FBiH attended by 79 455 students.
- Abilities that should be given preference during education process, in order to reduce the time necessary for initiating trainees into work are:
  - Good knowledge of practice,
  - Extensive responsibility for one's duties,
  - Computer literacy,
  - Candidate's skillfulness,
  - Ability to work as a team member,
  - Knowledge of machinery,
  - Knowledge of materials,
  - Narrow specialization of candidates,
  - Knowledge of utilization of new technologies,
  - Communicability of candidates,
  - Precision in fulfilling tasks, etc.
- The necessary competencies for wood processing vocations are:
  - IT competencies;
  - Economic and language competencies: training of workers, understanding of demand of foreign companies, (demand, supply and procurement), knowledge of the English language, representation of the companies on international fairs, etc.
  - Key qualifications of candidates: responsibility, team skills, (ability to work as a team member), problem-solving skills, flexibility (ability to adapt), self initiative, self-learning, knowledge application (application of the knowledge in different situations), etc.
- The round table titled "REFORM OF WOOD PROCESSING VOCATIONAL AND TECHNICAL SCHOOLS ACCORDING TO THE REQUIREMENTS OF THE ECONOMY IN THE REGION CENTRAL BOSNIA AND HERZEGOVINA" was held on September 7, 2005 in Zenica. The round table meeting was attended by the representatives of ministries of education at cantonal and federal levels, the Federal Employment Bureau representatives, international organizations directly connected to the educational reform processes, headmasters and teachers from high schools, university professors, entrepreneurs, USAID CCA representatives and REZ RDA representatives and others.
- General conclusion was that the high vocational schools reform was necessary. In their endeavors, the implementers of this reform should harmonize their work among themselves, as well as with the requirements of business and labor market and with European and global standards.
- The schools are limited with their financial activities and currently they have no means to improve their working conditions and effects on their own initiative.
- Average grade for satisfaction of entrepreneurs in terms of their cooperation with educational institutions is 3.2, i.e. satisfactory. No less than 48 companies assessed the cooperation whatsoever and the most frequent explanation was that there had been no cooperation at all.

- Average grade for compliance of the educational system with the requirements of market is 2.5, i.e. occasionally/partially satisfactory.
- Satisfaction with the educational curricula in wood processing high schools was assessed as partially satisfactory and the average grade was 2.6.
- Opportunities to obtain the necessary skills and knowledge through formal education were also assessed as occasionally satisfactory and the average grade was 2.6.

#### e) ANALYSIS OF THE CURRENT SITUATION OF TRAINING PROGRAM IN WOOD PROCESSING HIGH SCHOOLS

- Training of students whose major is in wood processing is performed in two ways: in school workshops that are more or less equipped and in the premises of wood processing companies.
- Most frequent problems in the process of training performed in school workshops are lack of equipment/machinery, insufficient quantities of raw materials, overly large groups of students, lack of textbooks, etc.
- Most frequent problems in the process of training performed in the school workshops are lack of students' motivation for work, insufficient knowledge of students, incompatibility of training programs with the companies' requirements, safety problems, etc.
- The representatives of schools as well as the entrepreneurs assessed that training performed in the school workshops is the best solution. Given the limitations of the schoolwork and school workshops, compromise would be to conduct the trainings of the first- and second-year high school students in school workshops, and the III and IV year students, who would have the basic knowledge, would attend the classes in the premises of wood processing companies.
- Training of the students is mostly conducted in the companies dealing with value added wood manufacturing, while it is very little conducted in other wood products manufacturing facilities.
- Training is mostly conducted in the companies with more than 200 workers.
- Satisfaction with the students' knowledge demonstrated during the trainings was evaluated with the average grade 3.1. Only one representative of the companies evaluated the training programs as completely satisfactory.
- Satisfaction with the training programs was evaluated with the average grade 3.0 respecting that the cohesion of the grades was very low (46% of respondents evaluated the program as partially or completely satisfactory, while 25% of respondents evaluated it very negatively).
- Interest shown in organizing the training in the future was 38%. Increased interest was expressed by the representatives of the companies dealing with construction joinery manufacturing and manufacturing of other wood products.
- Increased interest in the future organization of training was shown by smaller companies with up to 20 workers employed.

#### f) POSSIBILITIES OF INTRODUCING INCENTIVES FOR THE COMPANIES RECEIVING STUDENTS FOR INTERNSHIP PROGRAMS

- Training of students in wood processing companies is conducted on voluntary basis.
- The companies did not request any form of compensation for this kind of service.
- The main reasons for refusing to organize the training may be divided into several categories:
  - Already present redundancy
  - Deficit of qualified labor force where any business activity which is not production is reflected in loss;
  - Problems with safety at work – safety problems and refusing to assume responsibility for the students
  - Incompatibility of the programs with the companies' requirements
  - «Investing in nothing», «We train them and then they go to work for someone else», etc.
- As there is no special purpose incentives for the companies and as the contracts of the companies and schools are realized on voluntary basis, there are open possibilities for non-special purpose funds to be used for these purposes.

#### g) ANALYSIS OF CURRENT EDUCATIONAL PROGRAM IN FACULTIES OF MECHANICAL ENGINEERING, MAJOR IN MECHANICAL WOOD PROCESSING

- Education of highly qualified personnel, with major in mechanical wood processing (MWP) in Bosnia and Herzegovina is pursued on the Faculty of Mechanical Engineering within the Sarajevo University and the Faculty of Mechanical Engineering within the Banja Luka University, as well as on the Faculty of Technical Sciences within the Bihac University.
- The Faculty of Mechanical Engineering within the Sarajevo University, Department of Mechanical Wood Processing (MWP) has two major courses: primary and value-added wood processing.
- In the Faculty of Mechanical Engineering within the Banja Luka University, there are four departments: production, thermodynamics and motorization, safety at work and mechanical wood processing.
- In Bihac University – the Faculty of Technical Sciences, Wood Department has been in existence since 1991 and there are two major courses: Technology and Product Design Departments.
- At the University in Zenica, there have been activities initiated to introduce three year studies of Production Business with major in Wood Processing Technology and Product Design in wood and metal industry in accordance with the requirements set out in the Bologna Declaration.
- Other high school institutions in Bosnia and Herzegovina have no possibilities to educate highly qualified personnel with major in wood processing.
- Lack of practical skills in the previous curricula and syllabi of technical faculties with major in wood processing is increasingly improving through new curricula and syllabi harmonized with ECTS system and the requirements of Bologna Agreement as the basis for higher education reform;
- Establishment of one or more institution in the form of science and technological centers which would offer services from domain of development and research to small and medium size companies which they cannot and should not possess or pay by themselves. It is necessary to urgently establish institutions providing assistance of technical and engineering nature to companies from the relevant area. Since the Region of Central BiH is the area with the largest concentration of wood processing companies in BiH, the logical location for such a science, research and technological center is Zenica being the capital of the region and an university center.

- The faculties need to relocate their own laboratories in production plants of the most successful companies in the region using the potentials of those companies in terms of available equipment and devices for conducting training and development of projects for outsiders.
- It is necessary to have more active participation of high level educational institution in organizing trainings for the companies in accordance with the requirements of business companies and contemporary global trends in this area.
- New curricula and syllabi on the Faculty of Mechanical Engineering in Zenica introducing Wood Product Design and Wood Processing is a good example of how should the educational processes be harmonized respecting the needs of economy and environment.

#### h) SCHOLARSHIP POSSIBILITIES

- The students with major in wood processing are in significantly less favorable position in comparison with the students whose major is other than wood processing because there is proportionally small number of the former.
- Scholarship funds are not oriented towards giving incentives to certain economic activities and the number of students dealing with certain economic activity depends on their total number in the high level educational institutions and degree of their organization.
- Governmental scholarship funds are not oriented towards giving incentives to certain economic activities either and the most frequent eligibility criteria for granting scholarships are achievements made during the studies and welfare cases.
- A scholarship for students granted by companies is not often the case (approximately 11% of the wood processing companies have the scholarship system in place).
- The requirement of granting scholarships is often recognized by the companies dealing with furniture production and employing more than 200 employees, and the companies employing up to 20 workers. The Companies from the Municipality Zavidovici and Kakanj often have the scholarship system introduced.
- The problem of granting scholarships to students in smaller places is significantly large and it has been recorded on several occasions that the students who received the scholarship in the small places wanted to stay in Sarajevo or some other bigger city where they had studied and where living conditions were more comfortable and meaningful and where there were more opportunities for employment. The companies could be protected by signing a contract with scholarship holder who would be obliged to subsequently repay the funds invested in his/her education; however, the companies perceive it as a loss as they cannot realize their plans that are directly related to the scholarship holder's employment. Since it is about long-term plans affecting the operations of entire company, the companies are reluctant and distrustful about granting scholarships. There are several positive examples of granting scholarships to the students that are to become the employees of the relevant company.