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1. EXECUTIVE SUMMARY

This document provides an overview of the Pilot Innovation Environment in Federation of Bosnia and Herzegovina, developed within the FORESDA project. The PIE is a result of two activities: A4.1 Development of Pilot concepts which included creating of Pilot Working Group, developing of Pilot design and Roadmap; A4.2. Implementation of Pilot Environments which included monitoring and evaluation of Pilot.

The development and improvement of technology and production is closely related to the development of the IT sector and various software. It is possible to establish a link between product improvement by using various software and energy efficiency. That can be seen on reducing energy consumption by reducing the time needed for product development, starting from product design, designing the model to the preparation of processing technology and processing itself on modern CNC manufacturing machines.

Finally, achievements were detailed, including contributions of the pilot to national and European strategies.

2. MOTIVATION FOR PILOT INNOVATION ENVIRONMENT

2.1 BACKGROUND

Forest-based industry (FBI) – known as a traditional and low-profitable industry – has been facing many struggles in the 21st century. A competition from substitute materials (plastic, steel, hybrid materials) have taken significant market share in products that previously were made almost exclusively of wood (siding, windows, decking). However, some economic and social developments (growing purchasing power of developing countries, an increasing realisation of the environmental attributes of wood, concerns for climate change) offer a promising future for the FBI.

In the last twenty years, FBI in Federation of Bosnia and Herzegovina has shown growth in terms of number of companies, number of employees, exports and positive trend balance. Companies are constantly modernizing their equipment in order to accommodate diverse trends and needs of their customers. However, the innovation capacity of SMEs is generally poor (no R&D sectors or investments, limited cooperation with R&D institutions, poor cross-sectoral cooperation).

From innovative wood and lightweight construction via energy-efficient optimisation of building shells through to use of renewable energies – these offer new perspectives on all aspects of the subjects of wood, construction, facades, energy technology and climate-friendly energy generation.

2.2 OBJECTIVES

The main objective of the Pilot Innovation Environment and the specific Pilot related to building with wood was to create a concept of the education of young people for SME needs. A number of graduate final works with concrete research in the domain of wood processing design solutions and technologies have been made so far for the needs of the industry, so that collaboration between faculties, R&D and business sector, research and application of innovative ideas in new technologies, processes or the application of new methods in cooperation with companies is the role of this institution. This is an essential

precondition for SME development through the development of new products and application of modern manufacturing technologies.

3. SHORT DESCRIPTION OF PIE

Implementation of PIE in the FBiH was realised through the following activities:

Design and dissemination of promo brochure “Building with wood” according to energy efficiency with analysis of:

- advantages of solid timber houses
- advantages of wooden windows and doors
- advantages of wooden furniture.

Promotion of new trends and technologies necessary for improving production in the field of wood processing – EDUCATIONS FOR DEVELOPMENT OF PRODUCTS, :

- Education in the field of furniture design
- Education for the use of AutoCAD software (3D)
- Education for using TOWER software (3D)
- Education for using SolidWorks (3D)
- Education for working on CNC machines
- Education in the field of standardization and security requirements of furniture (related to testing in the LIND laboratory).

4. PIE ACHIEVEMENTS

Successfully realized visits to the companies in the field of wood processing, analyses and promotional brochures “Building with wood” made. The brochure was distributed through the web site, e-mail and FB Agency ZEDA to all stakeholders in Bosnia and Herzegovina. Educational and promotional brochure delivered via e-mail to more than 50 stakeholders and news (with the promo brochure attached) via FB viewed more than 500 times. Also, the brochure has been translated into English and delivered to all partners of the FORESDA project what brings transnational dimension to cooperation.

The planned education was realized in 2018 and 2019.

More than 30 SMEs educated from the wood and joinery sectors:

- in the field of 2D and 3D modelling (3 educations – AutoCAD, SolidWORKS, TOWER)
- for the use of CNC machines (1 education)
- in the field of standardization and security requirements of furniture standards (1 education)
- expert round table discussion on furniture design.

In the framework of the pilot, more than 30 representatives of companies, unemployed and students attended to professional educations, while more than 1000 interested parties received information on the promo brochure and the realization of professional educations.

4.1 CONTRIBUTION TO NATIONAL STRATEGY (RELATED TO FBI/FORESDA)

Forest Based Industry of Bosnia and Herzegovina is recognized as a strategic industry in government documents (Law on Forests of the Federation of Bosnia and Herzegovina, Strategy for Promotion of Wood Sector Export of Bosnia and Herzegovina). PIE contributes to this Action plan in different fields: cooperation between faculties and SMEs, cross-sectoral cooperation, organisation of trainings and seminars for knowledge transfers, promotion of wood as a material...

4.2 CONTRIBUTION TO NATIONAL/REGIONAL DEVELOPMENT AND INNOVATION POTENTIAL

PIE in the FBiH contributes to the national strategy dedicated to the development and competitiveness of SMEs (Strategy for development of the Federation of Bosnia and Herzegovina 2010 - 2020) which is in line with Small Business Act for Europe. The important part of this Strategy (Principle I. and IV.) is to promote the upgrading of skills in SMEs and all forms of innovation. Here the main pillar is Strengthening of sustainability and competitiveness of SMEs where few measures are related to the improvement of cooperation of faculties/technological parks with SMEs. Implementation of PIE in the

FB&H where we had cooperation between faculties, R&D and SMEs (from different sectors) is fully in line with priority measures in strategy.

4.3 CONTRIBUTION TO THE OBJECTIVES OF FORESDA

Implementation of PIE in the FB&H strongly contributed to reaching the objectives defined for the FORESDA project. This especially applies to specific objective 2 which aimed at supporting cross-sectoral and transnational innovation. Activities taken within our Pilot addressed both cross-sectoral cooperation (university, mechanical engineering sector, wood industry SMEs) and transnational collaboration (project applications with FORESDA partners). The concept of building with wood is an example of the improved existing process in wood industry demonstrated also through new project with FORESDA project partners. All 3 keywords mentioned in the objectives of FORESDA – knowledge transfer, collaboration and innovation – are addressed during the implementation of PIE.

4.4 HOW DOES THE PILOT CONTRIBUTE TO THE PROGRAMME PRIORITY “INNOVATIVE AND SOCIALLY RESPONSIBLE DANUBE REGION”?

The PIE activities contributed mainly to the Programme Priority Area 8 which aims to support the competitiveness of enterprises in the Danube Region. The implementation of pilot fostered cooperation and exchange of knowledge between SMEs, academia and the public sector. Also, over 30 SMEs were supported through realisation of the educations. Finally, considering that wood related SMEs often work in rural areas – improved production process directly contribute to the competitiveness of such companies.

4.5 HOW DOES THE PILOT FIT INTO EUSDR?

The pilot contributed mainly to Pillar 3: Building Prosperity and Priority Area 7 – to develop the Knowledge Society. This is reached through fostering close cooperation, knowledge/experience exchange between SMEs and research institution (University of Zenica – Mechanical Faculty). Also, one of the PA7 targets is to enhance regional research and education co-operation to reach 20% of academic mobility within the region by 2020.

5. CONTINUATION OF PIE

Pilot Working Group highly positive rated the pilot project during the Final evaluation meeting. This means that further involvement of partners in this group is ensured. In the forthcoming period, an increase in the construction of wooden structures is expected.

ZEDA successfully realized CNC education on 5 CNC educational machines in the Impulse Creative Center of the Agency ZEDA. Considering that over 50 interested persons applied for CNC education, ZEDA has decided to implement at least the second CNC education by the end of 2019.

Also, after a successfully realized round table discussion in the field of wood products design, ZEDA plans in the first half of 2020 to disseminate and implement a conference on a national (and possibly also a regional) level on the design of wood products (furniture, joinery, wood construction, ...).

This task is susceptible to the already existing innovations by the manufacturers of building materials that will require careful research for different wood applications or at least different approaches for different purposes.