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1. EXECUTIVE SUMMARY

This document provides an overview of achievements of the Pilot Innovation Environments (PIE). Based on the results of work package 3 (WP 3) of the FORESDA project and the actual situation in the Northern Black Forest Region (WFG), the German project partners CyberForum, inno and WFG decided to establish a pilot, which shows the potential of a modern forestry and furniture industry. With the Pilot project “Smart home – Smart Furniture” three topics were covered: Information technology, New Materials and Innovation & Funding programs. For the Forest-Based Industry (FBI) sector to stay competitive, cooperation between SMEs and R&D Organizations to start innovative projects and share information about the topic of digitalization are absolutely necessary. With the regional working group, consisting of SMEs, R&Ds and the Cluster “RegioHOLZ”, and an additional LinkedIn group, the prerequisites for a cooperation platform were made. The Pilot Innovation Environment within the German Region mainly tried to support SMEs from the FBI sector to stay competitive in the future.

2. MOTIVATION FOR PILOT INNOVATION ENVIRONMENT

2.1 BACKGROUND

The Northern Black Forest region is a region with around 30.000 companies, most of them SMEs. It is one of the most densely wooded areas of Baden-Württemberg, because of that the FBI sector is very important for the region. It is necessary and vital to ensure that it remains competitive in the future. The sector does not only provide for a high number of jobs, but also has a long tradition in the region. Many companies have been family-owned for generations. Digitalisation and innovativeness still play a very subordinate role in most SMEs today, mostly due to a high workload and therefore a lack of interest in change. The goal is to shift this perception and to sensitise SMEs for the need to be part of the digital transformation to secure and develop the continuity of the SMEs of the FBI sector in the Northern Black Forest. Additionally, the PIE focused to exploit existing potential and initiate new innovative ideas.

The pilot was mainly implemented in the region of Karlsruhe (Technology Region Karlsruhe) and Northern Black Forest in the State of Baden-Württemberg (Germany) with the thematic focus “Smart Home – Smart Furniture” as a cross-sectoral approach between the (wood and) furniture sector and the ICT sector as key-enabling technologies for traditional industries. It united the two original pilot innovation environments of WFG and CyberForum into one.

2.2 OBJECTIVES

The Pilot project “**Smart Home - Smart Furniture**” aims to promote innovative and intelligent (digital, sustainable) solutions for building construction and the interior and exterior furniture market.

Main objectives that have been defined are:

- Promote the development of new products and services with higher added value by using new technologies and / or business models in the smart home / smart furniture market;
- Create a reference point for digitally enhanced wood construction and furniture value chain and processes for SMEs and micro-enterprises;

- Foster the development of innovative wood-based materials (e.g. wood-based composite materials) and their use in the European furniture sector;
- Establish a sustainable regional community of relevant actors;
- Provide a physical and virtual platform for cross-sectoral knowledge exchange;
- Foster collaboration between high-tech sectors (e.g. IT) and more traditional sectors (wood-based industries) through the initiation of concrete interdisciplinary cooperation projects;
- Provide support in terms of innovation for the traditional wood-based industries.

3. SHORT DESCRIPTION OF PIE

During the project period, activities related to the pilot idea of CyberForum (CF) as well as activities related to the idea of WFG were implemented.

In a first step CF, innoAG and WFG collected members for the working group “Smart Home – Smart Furniture”. Representatives from research organizations (e.g. FZI), SMEs (e.g. Häfele GmbH und CoKG) and material specialists (e.g. MPA Stuttgart) could be recruited as members. Due to the open character of the working group, it grew steadily. For instance, Kimocon GmbH, specialized in Smart Kitchen, became a new member in a later project period.

Two workshops for the working group members were organized by the project partners. During the first one (15.11.2017), the participants got information about the FORESDA project in general and the idea of the German pilot project in special. The second workshop (12.03.2018) took place at the company Häfele in Nagold and enabled the participants to gather impulses about the topic "Smart Home".

In relation to the visit to Häfele, an interview was conducted with the responsible project manager Mr. Ohmenhäuser on the subject of "Smart Home". Following this, another Best-practice interview was also held with Kimocon GmbH.

One of the central pilot activities was the commissioning and continuous maintenance of the online platform DIZ | Digital Innovation Centre (<https://www.diz-bw.de/initiativen/holzwirtschaft/>). General information about the FORESDA project and the

pilot were provided, as well as information about the wood-based material "Wood Plastic Composites (WPC)", which was made accessible by a publicly visible presentation located on the website. Under the category "Newsroom", project-news i.e. about the success of the pilot projects in other partner countries were published. A newsletter, which was published every three months informed the participants of the working group about events, R&D topics, etc.

Additionally, the FORESDA PIE team was present at fair booths and participated in events related to our pilot idea, i.e. fire protection in multi-storey timber construction. Last but not least, CF, inno and WFG support SMEs and R&Ds in Knowledge exchanges and the development of innovative project ideas.

4. PIE ACHIEVEMENTS

For the successful implementation of the pilot idea, a working group with 18 members from 14 companies and institutions located in the Northern Black Forest Region was formed at the beginning. Two workshops informed the participants about the FORESDA project and were a possibility to raise awareness for the need for digitisation and innovation, especially in the FBI sector. The Best-practice- interviews which took place in framework to those workshops had their focus on the topic "Smart Home". Both contain exciting information on the current situation in this area and gave an outlook on possible future developments. They are published on the digital magazine techtag (<https://www.techtag.de/>) and are also available online via the Pilot website (<https://www.diz-bw.de/initiativen/holzwirtschaft/>). The collaborative platform as a central component of the pilot project was successfully established and operated. In addition to the platform, a LinkedIn group was founded for members of the working group, which provides an opportunity for mutual exchange etc., beyond the duration of FORESDA. Furthermore, an internal Newsletter for all working group members was established and published every third month.

Also, some specific Knowledge Exchanges (KE), e.g. with Kimocon GmbH or Häfele GmbH & co.KG generated new know-how and ideas on both sides. A total of 10 SMEs was involved in the KEs so that the target set (10 SMEs) could be achieved. In the topic of Project Developments, 11 SMEs were involved. With two SMEs which came up with their own

innovative project ideas and nine SMEs which participate in a workshop-project about digital business models, the target set (5 SMEs) could be achieved as well.

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

Digitalization affects the FBI sector, but at the moment SMEs in particular do not pay much attention to this topic. With the strategy Forestry 4.0 Baden-Württemberg this should be changed. The main goal is to establish a comprehensive communication between all involved participants. The German PIE has the same strategy, but it refers to a later step of the entire value chain "wood". While the digitisation initiative of Forst 4.0 focuses mainly on forestry, the main focus of our PIE is on companies in the timber industry (e.g. carpenters). The second national strategy is "Wood construction campaign", which is composed of 10 innovation packages. Some of the topics are in line with our PIE, but in general the strategy is more focuses on construction, fire-protection and Sustainability standards in construction. As our PIE implements new materials especially for furniture, e.g. Wood Plastic Composites (WPC), the strategy also has a work package to search for new materials for construction. In innovation package 10, the campaign wants to focus on cooperation between R&Ds, Universities, etc. This is in accordance with our established working group "Smart Home-Smart Furniture", as well as Knowledge transfers.

Our PIE also suggests new innovative ways in the FBI sector, especially into the topic "Smart Home". The Best-practice Examples show new and important possibilities beside the strategy we already have in our regions.

4.2 CONTRIBUTION TO NATIONAL/REGIONAL DEVELOPMENT AND INNOVATION POTENTIAL

The German forest-based industry is in a pioneering role worldwide. Therefore, research and innovation in this sector must constantly be promoted in order to make it more competitive at the global level. There is a need for cooperation outside the German borders and between the industry, the research sector and other interest groups and organisations

from related sectors. Bringing research and development together in the different sectors poses the challenge for the growth of the FBI sector in Germany. Besides the influence of digitisation, the future development of new technologies in the FBI sector is also important. The aim of the Pilot Innovation Environment is to identify possible ways for innovation and cooperation and to facilitate their realisation. The innovative cooperation of companies along the entire value chain is a core task. The main focus is on SMEs in the woodworking sector, e.g. carpenters.

4.3 CONTRIBUTION TO THE OBJECTIVES OF FORESDA

Digitalisation and also the innovative spirit of SMEs are becoming increasingly important for the economy and society in order to maintain their competitiveness. This development supports the Pilot Innovation Environment (PIE) within the FORESDA project, which is in line with specific objectives 1 and 2.

Within the PIE, new ideas for innovation projects emerged within the working group. The low levels of cooperation along the value chain were improved and various innovation projects were initiated. During the work within the PIE, ideas for cooperation were identified and partly realised as well as international new developments published via the online platform in order to give the companies the chance to remain competitive in the future.

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

The Programme Priority “INNOVATIVE AND SOCIALLY RESPONSIBLE DANUBE REGION” implements seven main achievements. The ones which were supported by the PIE of Germany are shown below:

- **Objective 1** supported by PIE: to improve business support to strengthen the capacities of SMEs for cooperation and trade.

Output: Knowledge exchange between SMEs and public sector in general and a small share between SMEs and R&Ds

- **Objective 2** supported by PIE: To prioritize the effective implementation of measures provided for under the Small Business Act for Europe.

Output: In the internal Newsletter, information on project support for SMEs were regularly presented to the members.

- **Objective 3** supported by PIE: To improve the competitiveness of rural areas and in particular of the agricultural sector

Output: With the DIZ-newsroom SMEs have the opportunity to be constantly informed about new Business trends, e.g. in the FBI sector. And as a member of the working group and/or LinkedIn group also the possibility to find a partner for innovative projects is given

- **Objective 4** supported by PIE: To eliminate cross border barriers and bottlenecks to people and business -Seamless Europe for a liveable Danube Region.

Output: Due to the open nature of the working group and LinkedIn group, companies from the whole Danube Region have the opportunity to join and exchange their Knowledge/Business Cases, as well as to find cooperation partners for projects.

4.5 HOW DOES THE PILOT FIT INTO EUSDR?

The PIE in the Northern Black Forest is in line with the EU Strategy for the Danube Region. The protection of the natural, economic and cultural heritage along the Danube through the development of regional, novel Pilot Innovation Environments (PIE) is a top priority.

PIE has enabled local wood-processing SMEs, cluster managers, policy makers, representatives of universities and R&D to jointly invent new products in the furniture industry and, through the working group, to stay in contact beyond FOESDA and initiate further projects. The idea of cross-sector innovations between R&D and SMEs forms the background for the development of the pilot working group.

5. CONTINUATION OF PIE

The working group will continue to exist beyond FORESDA and maintain its open character for all interested SMEs and institutions. This includes the retention of the Linked-In group. Within the group, there will also be the possibility for a fast and uncomplicated exchange of information on the topic of "Smart Home-Smart Furniture" in the future. Particularly important to improve the working group and the topic "Smart Home" better in the region Northern Black Forest, are companies that can take a pioneering role, such as Häfele GmbH & Co.KG. The working group will also be used as a starting point for further innovation projects, which can be financially supported by national funding programmes, e.g. from the state of Baden-Württemberg.

Furthermore, the online platform will exist beyond FORESDA as well. So, the topic "Smart Home" serves to keep companies and institutions in the region aware even after FORESDA. To this purpose, politics must also attach more importance to the topic in the FBI sector.