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DanuBioValNet

Cross-clustering partnership for boosting eco-innovation by developing a joint bio-based value-added network for the Danube Region

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Pilot actions for closing bio-based value chains: Challenges and Opportunities of Eco-construction in the Southeast Europe

Deliverable 6.1.1

OSIA for closing bio-based value chains

Zagreb (Croatia), May 2019

Project co-funded by the European Union Funds (ERDF and IPA)
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List of abbreviations

BSO	Business Support Organization
DTP	Danube Transnational Programme
SMEs	Small and Medium-sized Enterprises

DanuBioValNet project

The DanuBioValNet project is a cross-clustering partnership for boosting eco-innovation by developing a joint bio-based value-added network for the Danube Region. DanuBioValNet stands for development of a joint bio-based industry cluster policy strategy, clusters connecting enterprises transnationally, new bio-based value chains in the Danube Region and eco-innovations for supporting regional development.

The DanuBioValNet project, launched in 2017 through a cross-regional partnership involving 17 partners from 10 Danube regions, will enhance transformation from a fossil-based economy towards an economy using renewable resources by creating bio-based value-added networks. The project will connect Danube actors in a bio-based industry to minimize greenhouse gases and to optimize biomass resource utilization. These measures are intended to improve the sustainability and regional development through diversification of the local economy while positively affecting the workforce. The focus on emerging transnational cooperation of clusters should serve to foster the bio-economy and eco-innovations and should lead to a strengthening of the regional economies.

The development of new bio-based value chains from primary production to consumer markets needs to be done by connecting enterprises from different regions and industries. However, due to a missing holistic transnational approach, the Danube actors in the current bio-based industry still operate disconnected and cannot properly benefit from their potential. Therefore, the aim of this project is to develop new methods, strategies and tools to connect enterprises transnationally. Clusters represent groups of industries that are closely linked by common products, markets, technologies and interests. They are chosen to organize and carry forward the needed industry cooperation for the creation of new value chains. Properly performing clusters can help to upgrade industrial practices, generate new knowledge and contribute to regional policy-making.

The partners of the DanuBioValNet agreed that phytopharma, eco-construction and bio-plastic/advanced packing (bio-based packaging) have a high potential for improvement of their respective value chains, and hemp is considered as a raw material suitable for all the three value chains. Project efforts are designed to allow partners to connect SMEs, farmers, universities, and research institutes within a value-added DanuBioValNet network. The partners intend to develop and implement a long-term, industry-driven roadmap for such collaboration along the entire value chain based on cluster partnerships for these processes. Focusing on the selected high potential sectors, and harnessing the nature of regional clusters within wider cross-regional selected value chains, DanuBioValNet will implement pilot actions, involving SMEs, universities, research institutions, policymakers, and civil society among others. The pilot actions serve as the prerequisite for creating a blueprint for cross-regional cooperation

Workshop „Challenges and Opportunities of Eco-construction in Southeast Europe"

Organizer:
Croatian Wood Cluster

Date of the event:
24.04.2019

Place:
Zagreb

Objectives:
1. To initiate creation of the platform, which will support the development of the bio-based industry and eco-construction in Croatia and other countries of the Danube region
2. To create proposals for the eco-innovations and project ideas among relevant stakeholders by involving most innovative SMEs

The workshop aims to answer some of the questions arising because of high potential for the intense development of the eco-construction in the Danube region:
• What could be the role of the architects and designers?
• How to implement more bio-based materials in the construction projects?
• Why is eco-construction important for further development of tourism?
• How can eco-construction support transformation towards bioeconomy?
• What is the importance of innovations in the eco-construction projects?

Background

The transition from a fossil-based to a bio-based industry addresses some of the main challenges identified in the Danube region. The dependency on fossil resources will be reduced and climate change targets will be supported by reducing the greenhouse gas emissions. Furthermore, the eco-innovations will support the regional development by diversifying the local economy and creating new employment opportunities. The development of new bio-based value chains from primary production to consumer markets needs to be done by connecting enterprises from different regions and industries. Accordingly, those bio-based value chains require the adoption of new technologies and high capabilities of firms to act in interconnected value chains
(VCs).

The Role of the Eco-construction Sector
One of the bio-based value chains, which can support further development of the bio-based industry, is the eco-construction sector. With a long tradition, the wood-processing industry in the Danube region is very well developed with know-how, research capabilities, quality and design. There are numerous benefits of the eco-construction for further development of the whole Danube region economy system, but experts still look for the best approach to the main challenge linked to shifting of the society perception and bringing of the public awareness towards the need and importance of using bio-based materials in the construction industry.

Gaps and challenges
The industry and its customers are currently more price-oriented and do not think so much about the environmental impacts. The main driver in construction is still energy efficiency but the concept of resource efficiency is catching up. Therefore, eco-construction is an emerging market in the

construction industry. The demand for environmental-friendly products increases from year to year due to a relatively wide variety of possible products. With the increase of new breakthrough technologies and production capabilities, costs of the eco-based composite materials and prefabricated structures will be reduced, thus making it more affordable to a wider range of customers.

Participants

The workshop was attended by 28 participants of different profile:
SMEs (9)
Local development agencies (2)
Education sector / Faculties and vocational schools (5)
Clusters (3)
Ministries (3)
R&D (3)
Other (3)

The participants were asked to think critically about the possible solutions to increase the eco-construction projects. In particular, the discussion focused on the impacts and target groups, as well as on the potential steps towards other relevant stakeholders that could support activities and actions towards development of more eco-construction products and projects. The participants also emphasized the importance of building the sustainable network of relevant stakeholders, who could contribute to their resilience and competitiveness in the future.

Agenda

Agenda of the event was focused on the most important topics related to the eco-construction challenges and opportunities in the Danube Region, and with particular focus on the Southeast European Region.

The following table provides clarification of the decision to insert the respective topics on the agenda:

Why does cross-sectoral collaboration need a supporting bioeconomy strategy - The experience from Austria (Framework, Challenges and Approach) *Prof. Dr. Hubert Dürrstein,* *Institut für Forsttechnik, Abteilung für Wald- und Bodenwissenschaften, BOKU - Universität für Bodenkultur Wien (Key note lecture)*	The keynote lecturer tackled the importance of having a bioeconomy strategy as a framework condition for having more eco-construction projects on the market.
Eco-construction and passive houses *Prof. LJubomir Miščević,* *Faculty of Architecture, Zagreb*	A passive house is more than just a low-energy construction concept. It represents the highest energy standards and reduces conventional heating costs up to 90%. At the same time, this concept encourages development of other eco-products and use of bio-based materials in general.

Wood biomass ash and construction products *Prof. Nina Štirmer, Phd.,* *Faculty of Civil Engineering, Zagreb*	Woody and agricultural biomass is among the highest biomass potentials for energy production as a sustainable fuel. Presently, most ashes in Europe are put in the landfill sites, causing financial and material losses as well as an environmental burden. A possible application for biomass ash is cement and/or sand replacement in cementitious materials.
Role of clusters in circular construction *Msc Vladimir Gumilar,* *Construction Cluster of Slovenia*	The construction sector plays an important role in the European economy. It generates almost 10% of GDP and provides 20 million jobs, mainly in micro and small enterprises. Construction is also a major consumer of intermediate products (raw materials, chemicals, electrical and electronic equipment, etc.) and related services. Therefore, clusters provide excellent platforms for establishing a cross-sectoral collaboration and activities linked to the development of new industrial value chains.
Eco-construction and general public: Price and prejudices *Ms. Tanja Marković,* *Croatia Green Building Council*	The statistics show that eco friendly construction is becoming increasingly popular worldwide. However, many people still build houses by using conventional methods, not because they would not care about the environment but because they believe that eco friendly construction is very expensive.

Group work

After the plenary lectures, participants were divided into three groups. The main objective was to identify answers to the following question: **How to boost the eco-construction in the Danube region?**

Each group had to develop discussion and offer possible solutions for the respective question by using the following methodology:
1. To identify challenges and opportunities
2. To develop conclusions and recommendations.

The methodology had to be applied on the following levels:
1. Education: Does the educational system support the eco-construction projects? What is the level of awareness on the topic among students?
2. Practice (products and projects): Do we have enough resources to develop eco-products and eco-construction projects? If yes, why do we not have more respective products and projects in the Danube region and Southeast European region?
3. Policy level: How can policy makers support the eco-construction? What would be/is the role of politicians?

Conclusions of the Workshop and Suggestions for further Actions

After 40 minutes of the group brainstorming and discussion, the participants developed the following conclusions and recommendations for further actions:

1. Importance of having a bioeconomy strategy as a framework. Most of the Danube region countries have not yet developed the strategy on how to implement bioeconomy in their societies. The bioeconomy strategy is important because it represents framework conditions for the development of bio-based products and projects, also in terms of fostering eco-construction projects. According to the Austrian experience, it is very important to have the politicians' support to open the process for all the possibly interested stakeholders, but also to ensure monitoring of the strategy implementation.

2. Passive construction supports development of related bio-based products. The European Union scenario for 2020 has set mandatory requirements for the Member States to reduce energy consumption and greenhouse gas emissions ("3x20") and to increase the use of renewable energy sources. The energy model of a passive house developed more than twenty years ago was accepted and rated as the best on the basis of the results achieved by saving energy, reducing emissivity and achieving warmth and other comforts. Encouraging of passive construction also promotes the development of innovative eco-products.

3. Need to support further researches on how to use side products in the bio-based products. Recent studies show that there are side products of the woodworking industry that offer a huge potential for the development of bio-based products, which can be used in eco-construction projects. However, further research and strong collaboration with the industry representatives are needed, in order to meet all the requirements of modern construction standards and sustainable building. In addition, SMEs in most of the Danube regions still have a limited access to R&D activities, which are crucial for the development of bio-based products.

4. Role of the clusters in boosting of bioeconomy systems. Clusters could be one of the most important tools to facilitate the development of bio-based products. They provide the easiest access to information and establishment of cross-sectoral as well as cross-regional and transnational collaboration, which are the three most often used approaches in the development of bio-based products. Clusters offer support related to the standards and regulation which are often among main obstacles in the process of development of new bio-based products.

5. Importance of building sustainable networks of consumers and producers of bio-based products. There are still many prejudices about eco-construction projects. Parallel, the lobbying activities of the traditional construction materials are very intense. Therefore more awareness actions on the importance of eco-construction projects, especially for the sustainable development of urban areas, are needed. Accordingly, it is important to involve customers in the process and to improve the incentives models that could support them to buy more bio-based products, which are still often more expensive than the products from natural resources.

6. Policies to encourage eco-construction products should be created by the bottom-up approach. There is a lack of policies, which would support and encourage more eco-construction projects. However, there is also a lack of information among policy makers on the importance and numerous opportunities that eco-construction projects offer for the community. Part of the solution could be to develop the policies by the bottom-up approach, instead of the passive top-down approach, as well

as to simplify the administrative processes related to the development of bio-based products and projects.

7. Need to develop new educational models related to the challenges of bio-based economies. New educational models should be developed, specialized for the support of the development of bio-based economy and related products and in accordance with the market needs and life-long learning concepts. In the long term, this approach, combined with a more intensive model of incentives towards research activities, could ensure more eco-construction projects.

8. Green public procurement can support development of bio-based/and innovative products. Although there are enough resources in the Danube region, which offer numerous opportunities to develop bio-based projects, there is a lack of the framework conditions that would support the more systematic use of bio-based products. Green public procurement is one possible tool on how to encourage the development and use of innovative bio-based products. However, additional education of the public procurement contracting authorities should be also provided, as well as awareness campaign among the general public.

9. Need to develop additional funding schemes to support transnational and cross-sectoral collaboration. There is a need for designing additional funding schemes that would encourage transnational and cross-sectoral collaboration in terms of the development of bio-based products and projects. The accent of this collaboration should be put on the direct cooperation of R&D institutions and SMEs, linked towards regional development strategies, and strongly supported by the clusters. It is important to strengthen the collaboration among all stakeholders of the regional innovation system by putting the accent on the access to the regional resources and market needs.

10. Need to raise awareness on the importance of the use of bio-based products. Further development of the eco-construction value chain strongly depends on national economic policies. Eco-construction value chain involves a broad spectrum of products and services not only during the construction period but also beyond. Therefore, it cannot be observed as one independent economy sector. Furthermore, it is the only value-chain that involves products and services directly linked to the everyday life. This fact offers a great basis for the development of the continuous awareness campaign on the importance of the use of bio-based products, with the special focus on the health and sustainable development of the society in general.

Summary

The workshop concept, sessions and speakers were well-received and notably a success according to conference evaluations and follow-up by participants post event.

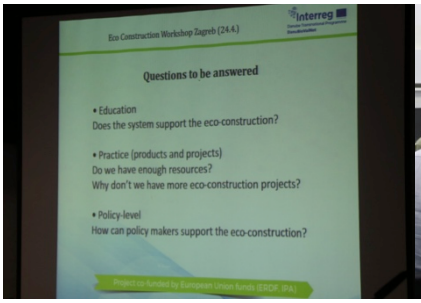
The purpose of this event was to be an introduction of what the organizer (CWC) hopes will be a series of steps towards building comprehensive, cross-sector, collaborative approaches to addressing regional needs, issues and challenges related to the competitiveness of SMEs in the Danube region linked to the eco-construction.

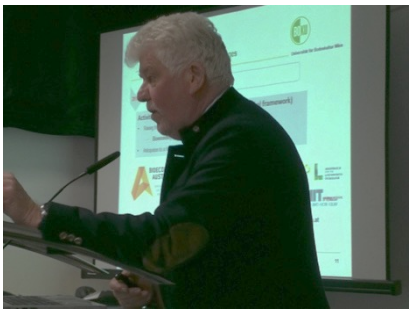
The results of this pilot action can potentially contribute to a stronger committment and development of collaboration networks with cross-sectoral character and oriented towards development of bio-based products and projects. However, there are many steps before the projects get in the finalization phase, and this event initiated also discussions towards those steps, for example, the need of building awareness on advantages of developing the bio-based economy.

It is therefore recommendable to take actions to strenghten the role of the clusters and collaborative networks in terms of development towards economy established on bio-based products. To foster the development of new value chains needed for this process, the interplay between clusters and regional authorities should be improved. In addition, there is a need for the continuous alignment of the available funding schemes, but also for the development of the tools and channels for stronger involvement of SMEs in the EU projects.

This event was successful in bringing together participants from all over the region, from various backgrounds to highlight activities, examples, and possible concepts for building successful, cross-sectoral collaborative approaches supported by the clusters. There was a strong commitment by participants to share their experience and knowledge, as well as to support the ideas of establishing some of the future initiatives building towards the next step as outlined above.

Pilot Action in Photos (Selection)*





*More photos...