EU-Western Balkans Cluster Policy Learning and Matchmaking Event

Roadmap Bio-based Advance Packaging Value Chain
Awareness workshop for cluster managers

PDF Reducer Demo
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IMPORTANCE OF BIOBASED PACKAGING VC

Global production packaging capacities by market segment (2017)

Danube region Packaging sector – numbers:

- 450,000 employees
- 27% of all related jobs in EU
- 28% of related firms in EU
- 10% growth rate
- Biobased „newcomers“, start-ups
- Innovation potentials
- Niche market

Source: European Bioplastics, nova-Institute (2017)
Bio-based packaging materials can be defined as „materials derived from renewable sources“.

In addition, such materials recognized as biodegradable according to the standards outlined in related EU Standards can be also understood as bio-based materials.

DanuBioValNet Bio-based packaging industry and value chain
### GAPS, MISSING LINKS AND REGULATIONS

DanuBioValNet bio-based packaging value chain

<table>
<thead>
<tr>
<th>Gaps</th>
<th>Missing links</th>
<th>Regulation / legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High price of raw materials</td>
<td>Better networking connections with other regions</td>
<td>Need for joint bio-based strategy</td>
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<tr>
<td>Better production processes</td>
<td>Suppliers of raw material manufacturers of adequate machinery</td>
<td>Lack of legal regulations at EU and on national level</td>
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<tr>
<td>Technical problems with manufacturing</td>
<td>Market demand</td>
<td>Clear distinction of compostable plastics from biodegradable plastics</td>
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<tr>
<td>Lack of knowledge</td>
<td>Sustainability and environmental impacts</td>
<td>Support for bioplastics on national level</td>
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<tr>
<td>Better &quot;End-of-life&quot; infrastructure</td>
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<td>Better recycling strategies</td>
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</tbody>
</table>

Source: Value Chain Mapping Synthesis Report: BioBased packaging
## OVERVIEW OF MAIN CONSTRAINTS AND IDENTIFIED GAPS

<table>
<thead>
<tr>
<th>Field/VC</th>
<th>Bio-based sources / feedstock</th>
<th>Technology and application (R&amp;D)</th>
<th>Market development</th>
<th>Socio-economic factors (legal, economic, social conditions, HR etc.)</th>
<th>Policy / business environment / legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-based Packaging</td>
<td>- lack of support for agriculture to produce the crops suitable for production of biopolymers</td>
<td>- lack of adequate machinery/technical solutions suitable for processing used raw materials</td>
<td>- lack of triggers for market demand for bio-based packaging products</td>
<td>- missing composting system of bioplastics, education of the population</td>
<td>- lack of cross-sectional/sectorial strategies</td>
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<tr>
<td>Bio-based</td>
<td>- lack of constant supply of source material</td>
<td>- problematic technical properties of the biodegradable bioplastics</td>
<td>- greater involvement of brands (brand messages) and retailers for using the bio-based packaging</td>
<td>- insufficient knowledge about biobased potentials</td>
<td>- need for a joint bio-based strategy that also involves bioplastics and bio-based packaging</td>
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<tr>
<td>Bio-based</td>
<td>- lack of continues supply chain of raw materials for the region</td>
<td>- lack of manufacturers of adequate machinery for suppliers of raw materials</td>
<td>- lack of cross-regional connections and networks - economy of scale</td>
<td>- issue of the exploitation of agricultural products for non-food processes</td>
<td>- better recycling strategies</td>
</tr>
<tr>
<td>Bio-based</td>
<td>- missing suppliers of raw materials</td>
<td>- technical problems with manufacturing</td>
<td>- missing market and demands of the bioplastic packaging</td>
<td>- lack of training and education in relation to the biodegradable materials</td>
<td>- need for positive legislation</td>
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<tr>
<td>Bio-based</td>
<td>- need for specialized tools to be developed for streamlined research projects</td>
<td>- weak price/performance ratio</td>
<td>- lack of better “End-of-Life” infrastructure</td>
<td>- lack of data inputs and outputs for basic LCA (lifetime cycle assessment) for different bio-based packaging products</td>
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<tr>
<td>Bio-based</td>
<td>- very small and limited market of the bioplastic products for the final products</td>
<td>- issues related to the use of bioplastics</td>
<td>- lack of knowledge and SME knowledge exchange</td>
<td>- need for involvement of NGOs and consumer organisations</td>
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</tr>
<tr>
<td>Bio-based</td>
<td>- inadequate / lack of market demand</td>
<td>- need for involvement of NGOs and consumer organisations</td>
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</tbody>
</table>
• National and Danube-wide platforms for providing and extending knowledge should be developed.

• Measures, such as subsidies and quotas must be developed for bioplastics and the bio-based packaging industry.

• Specialized tools need to be developed for streamlined research projects in the field of bio-based packaging.

• Sustainability and environmental impacts measures should be developed on the national and Danube region level. Advanced recycling strategies should be set.

• Assuring data inputs and outputs for basic LCA (lifetime cycle assessment) for different bio-based packaging products.

• Developing measures to better inform the consumers by involvement of NGOs and consumer organisations.

• Provision of a market-driven approach to using advanced packaging as a substitute for common non-reusable packaging by involving multinational corporations and retailers.
• **Information, explanation and awareness on bio-based products** must be spread by involvement of all actors in the bio-based ecosystem.

• **Cluster organizations** should take the leading role in provision of new services like networking and matchmaking events, training, project development, offering comprehensive information and education/training by covering the topic of bio-based materials.

• Better integration of all the players could greatly improve the adequacy of the material developments upon their launch into the market – **new role of cluster managers**.

• **Pilot installations** should be developed to address the demand of development of new technology and services for obtaining high quality products and services from bio-based materials.

• The intermediary players are generally micro, small- and medium-size companies, which do not have the resources to invest or alter processes in order to make prototypes which could demonstrate the potential of new bio-based materials. It is important to link this to R&D institutions and to proposals for pilots and demonstration projects.
We need to develop sustainable bio-economic structures