



**Interreg**



**Danube Transnational Programme**

**DanuBioValNet**

# Regional cluster landscape Czech Republic

**WP3 Value Chain Mapping**

**Activity 3.2 Cluster Mapping**

**Output 3.2 Cluster Mapping as an Analytical Tool**

**D3.2.1 Regional cluster landscapes and one entire cluster landscape for Danube Region**

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



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## CLUSTER MAPPING FACT SHEETS

In the following the cluster mapping results of selected clusters and cluster initiatives in Czech Republic in the field of Eco-Construction, Bio-based Packaging and Phytopharmaceuticals

are presented. Besides the mapping as such, additional informations are given about age, size, key objectives etc.

### ECO-CONSTRUCTION

There are cluster organisations/initiatives in the eco-construction industry in the Czech Republic:

#### Names of cluster organisations/initiatives:

- **National Wood Cluster**, established in 2005, seat in Ostrava, 11 relevant members in wood-processing/eco-construction industry (22 members in total);
- **Cluster of Czech Furniture Manufacturers**, established in 2006, seat in Brno, 13 relevant members in the field of manufacturing of wooden furniture and wooden constructions (29 members in total);
- **Moravian Forestry Cluster**, established in 2010, seat in Ostrava, 6 relevant members who do forestry activities, such as planting, forestry cultivation, logging, handling and removal of timber. They also buy and sell wood/firewood (12 members in total).

#### Short Description of the cluster/cluster initiative:

- **National Wood Cluster** operates in the fields of wood-processing, construction and related industries. Its members cover the entire value

chain of the wood-processing industry: the cultivation of wood and its logging, the subsequent processing and production of products with high added value to support services, development cooperation and education.

- **Cluster of Czech Furniture Manufacturers** associates cabinet makers, mediators of furniture trading and research and development institutions. They do activities in the field of the cabinet-making product innovation and furniture safety. Its member firms use the wood as raw input materials, as well as plastics, laminate and other chemical-based materials.
- **Moravian Forestry Cluster** is the regional cluster of firms focused on primary biomass sector. It associates forestry and timber enterprises on the territory of the Moravian regions (the Moravian-Silesian Region, Zlín Region, Olomouc Region and South Moravian Region). The enterprises do complex forestry activities: forestry work for forest owners – cultivation, logging, harvesting, forestry production, selling of firewood.

#### Cluster Visual Map of value chains:

The cluster map visual presentation sample is in figure below.



- 1) **National Wood Cluster**, 11 relevant members: timber logging and sale, sawmill, Gypsum-fiber boards, glued “EURO” squared timber and wooden briquettes, wooden constructions and materials for wooden buildings, wooden houses, etc.
- 2) **Moravian Forestry Cluster**, 6 relevant members: complex forestry activities: planting, forestry cultivation, logging, handling and removal of timber. They also buy and sell wood.
- 3) **Cluster of Czech Furniture Manufacturers**, 13 relevant members: sawmill, manufacture of wood-based panels, laminated chipboard, furniture from solid wood, wooden furniture, doors, atypical products incl. frame walls, etc.

1) Národní dřevařský klastr. Vznik klustru a jeho činnost [online]. (National Wood Cluster. Cluster formation and its activities). © 2017 · Good-art.eu. [cit 2017-12-13]. Available here: <http://www.wood-cluster.cz/o-klustru>

2) Klastr českých nábytkářů [online]. (Cluster of Czech Furniture Manufacturers). © 2014 KLASTR ČESKÝCH NÁBYTKÁŘŮ, DRUŽSTVO, [cit 2017-12-13]. Available here: <http://www.furniturecluster.cz/?language=en>

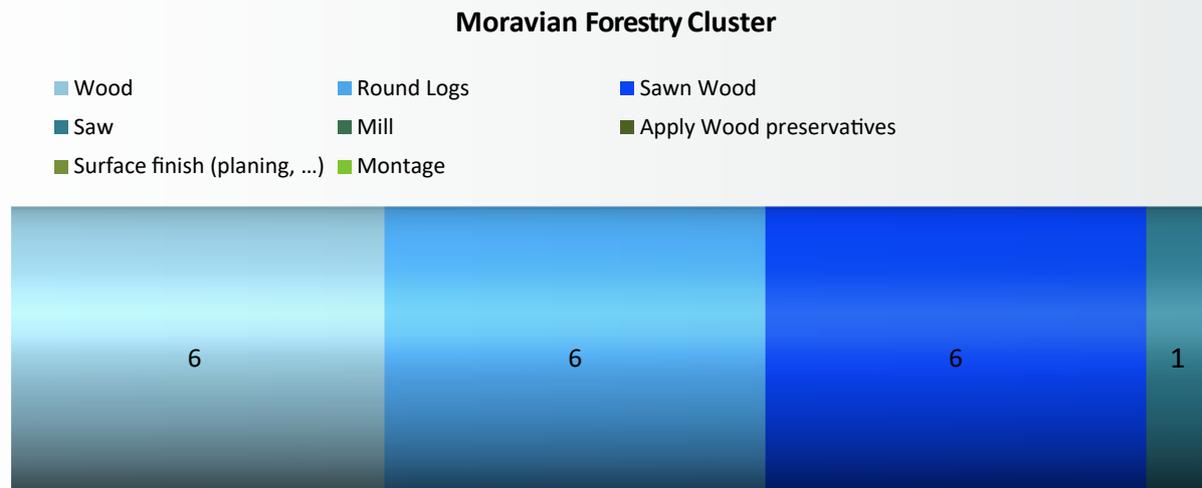
3) Moravian Forestry Cluster [online]. © 2017 by vbZ., [cit 2017-12-13]. Available here: <http://www.lesnickyklastr.cz/en>

Picture 1: Value chain visualisation – National Wood Cluster



Numbers indicate amount of companies in the respective value-adding step.

Picture 2: Value chain visualisation – Moravian Forestry Cluster



Numbers indicate amount of companies in the respective value-adding step.

Picture 3: Value chain visualisation – Cluster of Czech Furniture Manufacturers



Numbers indicate amount of companies in the respective value-adding step.

**Services offered by cluster organisation/cluster initiative:**

Active participation in the communication between business, public and other organizations in the frame of optimal management of forest ownerships. Support of the innovative, entrepreneurial and educational activities of their members.

**List and short description of other key actors in bioeconomy including those with strong cooperation between SMEs and research in your region/country:****• Leading clusters:**

- National Wood Cluster, Ostrava;
- Cluster of Czech Furniture Manufacturers, Brno.

**• Key industrial leaders:**

- RD Rýmařov s.r.o., Rýmařov;
- ATRIUM, s.r.o., Horažďovice;
- PENATUS s.r.o., Praha;
- KRONOSPAN CR, s.r.o., Jihlava;
- Dřevodílo Rousínov, výrobní družstvo, Rousínov;
- LIKO-S, a.s., Slavkov u Brna;
- JITONA a.s., Ostrava;

- Gerbrich s.r.o., Ostrava;
- JUTA a.s., Dvůr Králové nad Labem (natural heat insulation from flax fibre); etc.

**• Competent research and academia:**

- VŠB - Technical University of Ostrava, Faculty of Civil Engineering;
- Mendel University in Brno, the Faculty of Forestry and Wood Technology;
- Brno University of Technology, Faculty of Civil Engineering, Brno;
- University Centre for Energy Efficient Buildings of Technical University in Prague;
- Forestry and Game Management Research Institute, Jíloviště;
- Timber Research and Development Institute, Prague;
- Czech Technical University in Prague;
- Technical University of Liberec;
- The Czech Technology Platform for Textiles;

**• Important policy and decision makers:**

- Ministry of Industry and Trade;
- Ministry of Agriculture;
- Ministry of Environment.

**• Other key relevant stakeholders:**

- Association of Suppliers of Prefabricated Houses.

## ADVANCED BIO-BASED PACKAGING

There is no cluster organisation/initiative dedicated directly to advanced bio-based packaging (using of bioplastics) in the Czech Republic. But we can identify the cluster organisations which could cover a part of the packaging value chain, e.g.:

**Names of cluster organisations/initiatives:**

- **Plastics Cluster**, established in 2006, seat in Zlín, 4 relevant members that dealing with bioplastic materials (50 members in total);
- **OMNIPACK Cluster**, established in 2005, seat in Jaroměř, 1 relevant member that dealing with bioplastic materials (57 members in total).

**Short Description of the cluster/cluster initiative:**

The cluster organisations are not focused directly on bioplastic packaging. But some of their members are dealing with the bioplastic materials.

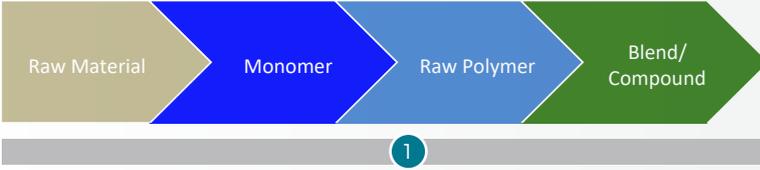
- **Plastics Cluster** is a platform for the plastic product manufacturers. Its member companies focus on manufacturing of plastic materials/

composites, plastics parts and products for other industries (mainly automotive, food, pharmaceuticals, cosmetics, bioplastic construction, etc.). Its member companies do not use BIO-plastics materials. But, the Plastics Cluster can cover a part of the Value Chain concerning the technical processing of plastics. However, its member companies do not use the bioplastic materials in large, there are only several research activities and projects.

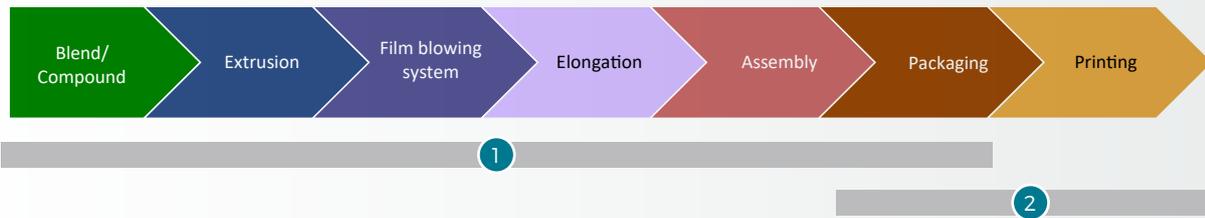
- **OMNIPACK Cluster** is a community of enterprises engaged in the design and manufacture of industrial packaging and packaging technology. OMNIPACK joint projects aim at modern technologies for the development and testing of individual components of the packaging system, (fixation, filling), etc. Its members focus on production and sales of packaging from paper and plastics (boxes, pallets, foils, bags, etc.). Currently, just 1 cluster member use bioplastics as an input material.

**Cluster Visual Map of value chains:**

The cluster map visual presentation sample is in figure below.



1 There are almost no companies at the first part of the value chain of the bioplastic packaging and there is no large resource of the bioplastic material for industry in the Czech Republic. Only several companies (members of the Plastic Cluster) do research on biopolymers either by themselves or in cooperation with universities.

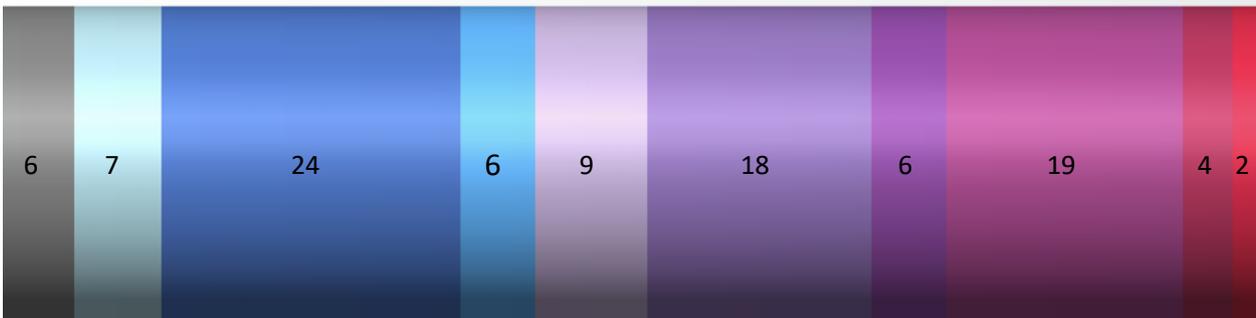


1 **Plastics Cluster** - 4 relevant members dealing with the production of biodegradable bioplastic packages, bags and sachets for food industry, bioplastic toys, etc.  
 2 **OMNIPACK** - 1 relevant member dealing with bioplastic foils and shrink sleeve for food industry

**Picture 4: Value chain visualisation – Plastics Cluster (bio- and oil-based plastic packaging)**

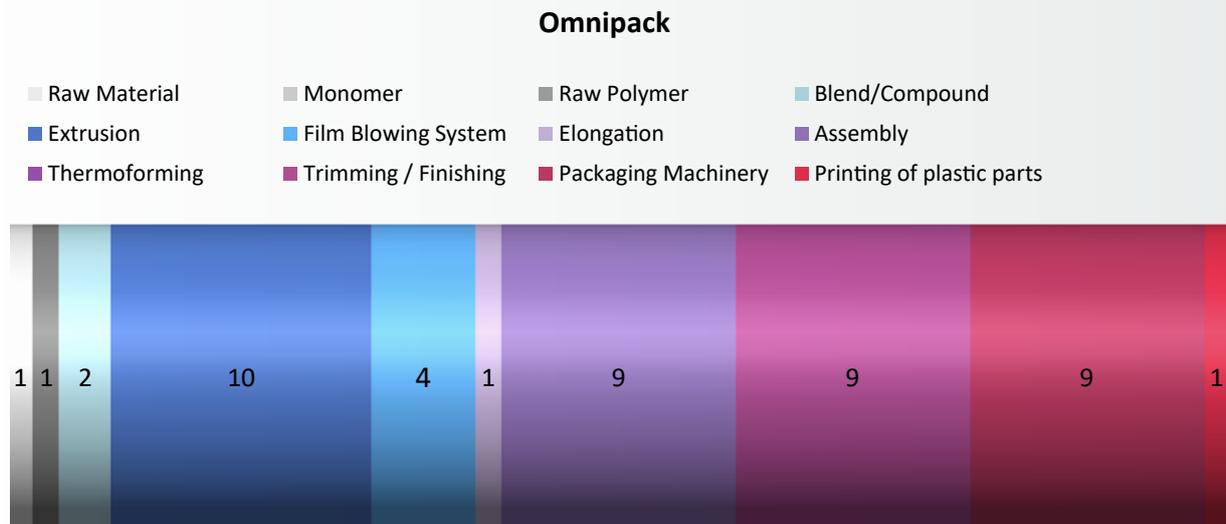
**Plastic Cluster CZ**

- Raw Material      ■ Monomer      ■ Raw Polymer      ■ Blend/Compound
- Extrusion      ■ Film Blowing System      ■ Elongation      ■ Assembly
- Thermoforming      ■ Trimming / Finishing      ■ Packaging Machinery      ■ Printing of plastic parts



Numbers indicate amount of companies in the respective value-adding step.

Picture 5: Value chain visualisation – OMNIPACK Cluster (bio- and oil-based plastic packaging)



Numbers indicate amount of companies in the respective value-adding step.

#### Services offered by cluster organisation/cluster initiative:

Support of the innovative, entrepreneurial and educational activities of their members.

#### List and short description of other key actors in bioeconomy including those with strong cooperation between SMEs and research in your region/country

- **Leading clusters** - there is no leading cluster in the bioplastic packaging in the Czech Republic.
- **Key industrial leaders** - single companies which are not cluster members, such as:
  - Greiner Packaging, Slušovice;
  - INVOS, spol. s.r.o., Svárov;
  - PEBAL, s.r.o., Nýřany;
  - Sapler, a.s., Karviná;
  - NAFIGATE Corporation a.s., Czech Republic, Prague;
  - TART, s.r.o., Ostrava;
  - GRANITOL, a.s., Moravský Beroun;
  - Martin Peroutka, Buštěhrad;
  - etc.
- **Competent research and academia:**
  - Technical University of Liberec, Liberec;
  - Tomas Bata University in Zlin - Centre of Polymer Systems;
  - Tomas Bata University in Zlin - Department of polymer engineering;
  - Brno university of Technology - Faculty of Chemistry/ Materials research Centre, Brno;
  - University of Chemistry and Technology in Prague;
  - Research Institute of Agricultural Engineering, Prague;
  - Centre in life science and advanced materials and technologies research, Prague;
  - Mendel University Brno;
  - University of Pardubice;
  - Crop research Institute, Prague (Composting of biodegradable plastics);
  - Institute of Experimental Botany AS CR, v. v. i., Prague (Composting of biodegradable plastics);
  - etc.
- **Important policy and decision makers:**
  - Ministry of Industry and Trade;
  - Ministry of Agriculture;
  - Ministry of Environment.
- **Other key relevant stakeholders:**
  - Czech Technology Platform - Plastics, Prague;
  - Technology centre Hradec Králové;
  - Bioplastic cluster initiative of Nafigate Corporation.

## PHYTOPHARMA

There is no cluster organisation/initiative dedicated directly to phytopharma industry in the Czech Republic. But, we can identify cluster organisations, which could cover a part of the phytopharma value chain, such as:

### Names of cluster organizations/initiatives

- **ORLICKO Agricultural Cluster**, established in 2016, seat in Žamberk, 7 relevant members which cultivate small value of herbs (15 members in total);
- **OMNIPACK Cluster**, established in 2005, seat in Jaroměř, 11 relevant members in packaging (57 members in total);
- **CzechBio**, established in 2009, seat in Jesenice u Prahy, 1 relevant member (31 members in total).

### Short Description of the cluster/cluster initiative

The cluster organisations are not focused directly on phytopharma industry.

- **ORLICKO Agricultural Cluster** specializes on the growing of plants for food industry and bio-energetics (biogas station). Its member firms focus on primary sector (agriculture and farming). The enterprises manage a total of 9,000 hectares of agricultural land (more than 3,600 hectares of permanent grasslands). The enterprises cultivate a wide range of plants (field crops, fodder crops, medical plants) and do the livestock farming. However, the cultivation of medical plants (for phyto-pharmaceuticals purposes) is only a very small part of their production.
- **OMNIPACK Cluster** associates the companies in the field of paper and plastics packaging.
- **CzechBio** is the association of the Czech biotech companies and institutions. Its member companies do plenty of activities mainly in the field of medical biotechnology, pharmaceuticals, food industry and chemistry. The phyto-pharmaceuticals industry is not the main interest of the cluster members.

### Cluster Visual Map of value chains:



- 1 **Orlicko Agrocluster** - 7 relevant members that grow (besides other) poppy, legumes and medicinal plants, *Phacelia tanacetifolia*, *Silybum marianum* and seed grass, animal feed (hay and sage), wheat, rye, barley, triticale, rape, peas and forestry, proliferation of grass seed, *Phacelia*, cumin, etc.
- 2 **CzechBio** - 1 relevant member with technology for the encapsulation of bacteria, enzymes or microorganisms
- 3 **OMNIPACK** - 11 relevant members who produce paper and plastic packages

Picture 6: Value chain visualisation - ORLICKO Agricultural Cluster



Numbers indicate amount of companies in the respective value-adding step.

Picture 7: Value chain visualisation - OMNIPACK Cluster



Numbers indicate amount of companies in the respective value-adding step.

#### Services offered by cluster organisation/cluster initiative

Support of the innovative, entrepreneurial and educational activities of their members.

**List and short description of other key actors in bioeconomy** including those with strong cooperation between SMEs and research in your region/country:

- **Leading clusters** – there is no leading cluster in the phytopharma industry in the Czech Republic
- **Key industrial leaders** – single companies which are not cluster members, such as:
  - ANNABIS, s.r.o., Olomouc;
  - Sonnentor s.r.o., Čejkovice;
  - Hempoint, s.r.o., Jihlava;
  - Bio Agens Research and Development - BARD, s.r.o., Úherce;
  - VALDEMAR GREŠÍK - NATURA s.r.o., Děčín;
- Byliny Mikeš, Čičenice;
- Planta Naturalis, Markvartice;
- Dr. Popov s.r.o., Planá;
- IREL, spol. s r.o., Miroslavské Knínice;
- Megafyt Pharma s.r.o., Vrané nad Vltavou;
- etc.
- **Competent research and academia**
  - Palacky University Olomouc (Laboratory of Growth Regulators);
  - Academy of Sciences of the Czech Republic, Prague;
  - Charles University, Prague (Department of Pharmacology and Toxicology, Faculty of Medicine in Pilsen);
  - Masaryk University, Brno;
  - Veterinary Research Institute, Brno;
  - University of Veterinary and Pharmaceutical Sciences Brno;

- Mendel University in Brno;
  - Tomas Bata University in Zlin - Food Technology, Food Analysis and Chemistry (Faculty of Technology);
  - Algatech Centre - University of South Bohemia, České Budějovice;
  - Institute of Chemical Technology, Prague;
  - Research Institute for Fodder Crops, Ltd. Troubsko;
  - Crop research Institute, Prague;
  - etc.
- **Important policy and decision makers**
    - Ministry of Agriculture;
    - Ministry of Industry and Trade;
    - Ministry of Environment;
    - Technology Agency of the Czech Republic, Prague.
  - **Other key relevant stakeholders:**
    - Czech Technology Platform for Organic Agriculture, Olomouc;
    - Pelero CZ, Brno (Association of growers and processors of medicinal, aromatic and spice plants);
    - Konopro s.r.o, Česká Metuje;
    - Hemp Association of the Czech Republic, Vlašim.

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