

D T.2.1.1 Missing Links for Regional Circular Bioeconomies AUSTRIA (UPPER AUSTRIA)



ERDF PP14 Business Upper Austria – OÖ
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1. Introduction

Results of the first output from the GoDanuBio project (“Analysis of Circular Bioeconomy Framework Conditions (WP T1)” provide an overview of current strategies and governance structures in the Danube macro-region and offer a hint on the existing gaps of circular bioeconomy, in terms of concentration (critical mass of relevant actors), capacity (skills), conditions (rules, legislation procedures) and culture (social acceptance and impact of circular-bioeconomy approaches). The outputs from WP T1 should serve as a basis for the identification of actors that are currently neglected in the bioeconomisation of the respective regions.

2. Methodology

The aim of this report is to create an overview of actors that are neglected in the circular bioeconomy so far but are needed to co-create sustainable development models. To also serve as inspiration source, good practice examples (projects/initiatives/business models) that already exist in individual regions of GoDanuBio or outside the consortium area were collected.

The methodology encompassed the following steps:

Step 1. Analysis of the regional reports T.1.2.1 Development of regional stakeholder reports

Each region has identified the existing actors involved in the bioeconomisation process. They have been divided into 4 categories:

- Industry (chambers of commerce, clusters, cluster organisations, enterprises, professional associations)
- Academia & Research (universities, research institutes, competence centers)
- Public (state agencies, local government, regional/central government, regional development agencies)
- Society (NGOs, informal civil organisations)

These represent the maximal typology of actors to be considered in the elaboration of the Integration Plan for prospective actors for developing a sustainable and holistic circular economy (T2.1).

Some categories of actors are currently involved in the bioeconomisation process in all regions (e.g., universities), others are not and hence the regional gaps occur.

The current situation and the pre-identified gaps are shown in a google drive shared document (Annex 1)

Step 2. Identification of good practice examples

When adding a missing actor in the list, the partners have relied on the shared experience from other partners that have identified that specific missing actor.

The following table shows the shared experience for Austria (Upper Austria).

Type of stakeholder	Pre identified actors	Examples/Type of cooperation
Industry		
Chamber of commerce	Commerce, agriculture	AlpBioEco, AlpLinkBioEco projects (INTERREG Alpine Space projects);
Clusters	Food, cleantech, wood	AlpBioEco project (INTERREG Alpine Space projects); GoDanuBio; DanuBioValnet (Danube Interreg project); Cluster Cooperation Projects (a regional Funding Scheme fostering innovation and cooperation);

		Schaltwerk2030 (Smart City Project funded by Klime + Energie Fonds); New Energy for Industry (NEFI) is an Energy Model Region funded by the Austrian Climate and Energy Fund.
Cluster organisations	Business Upper Austria	Business Upper Austria is the umbrella organization of Food Cluster and Cleantechcluster (and six other clusters)
Enterprises		Experince Exchange Round Sewage Sludge; Alpine Space Bioeconomy Workshop in the Course of Alp Gov; AlpBioEco project (INTERREG Alpine Space projects); New Energy for Industry (NEFI) Cluster Cooperation Projects (a regional Funding Scheme fostering innovation and cooperation).
Professional associations		
Academia & Research		
Universities	Applied Sciences - Bio- & Environmental Technology, Institute for Design Sciences and Product Development; Life Sciences - Department for Agricultural Biotechnology; Waste recycling Technology and waste management; Federal Secondary School) Elmberg for Agriculture and Food	AlpBioEco, AlpLinkBioEco projects (INTERREG Alpine Space projects); Alpine Space Bioeconomy Workshop; Cluster Cooperation Projects (a regional Funding Scheme fostering innovation and cooperation); Experience Exchange Round Sewage Sludge - involved in national research projects in bioeconomy; New Energy for Industry (NEFI)
Research institutes	Ecology, chemistry and technology;	Cluster Cooperation Project (a regional funding scheme fostering innovation and cooperation)
Competence centres	Kompetenzzentrum Holz (Wood K Plus): research organisation in the area wood and wood-related renewable resources, materials research, process technology, development of methods and basics to perform applied research on the economy-science interface, in order to enable resource-efficient	Experts in the Interreg Project AlpLinkBioEco and in the Alpine Space Bioeconomy Workshop and Delegation Trip to 4 th Bioeconomy Day to Baden Württemberg in the course of a small Project funded by Interreg Alpine Space Alp Gov,

	management in the circular bioeconomy.	
Public		
State Agencies	Directorate for Provincial Planning, Economic and Rural Development	S3 - of Upper Austria
Local Government	Office of the Upper Austrian Provincial Government - Directorate of Environmental and Water Management; Department of Environmental Protection	S3 - of Upper Austria Forms the backbone for all cluster activities. It involves research, business, industry, politics, etc. in equal measure. Consequently, it also stands as a recommendation for action behind any possible cooperation of all stakeholders and is therefore not shown in the matrix for the sake of clarity.
Regional/Central Government	Government of Upper Austria, Directorate for National Planning, Economic and Rural Development	As Business Upper Austria is the location agency of the federal state of Upper Austria, there is very close cooperation with the government. In particular, the Regional Minister for Economic Affairs defines many topics for the daily work of Business Upper Austria.
Regional Development Agencies	Regionalmanagement	Regional management is a subsidiary of business upper austria, and there is close cooperation in many areas.
Societ		
NGOs	Biomasseverband; Kompost- & Biogasverband;	Experts in the Interreg Project AlpLinkBioEco and in the Alpine Space Bioeconomy Workshop and Delegation Trip to 4 th Bioeconomy Day to Baden Württemberg in the course of a small Project funded by Interreg Alpine Space Alp Gov,
Informal civil organizations		

Step 3 Identification of the potential stakeholders

In Austria (Upper Austria the pre-identified gaps are: Cluster organisations, professional associations, competence centres, local government, regional development agencies, Informal civil organisations as shown in Annex 1 (google drive shared document).

The potential stakeholders are fill in Annex 2 (google drive shared document).

Step 4 Identification of good practices

The identified good practices are listed in Chapter 4 and will be further described in a dedicated template which will be integrated into the Best Practice Brochure (D.T2.1.2).

3. Missing Actors

Stakeholder group	Industry
Stakeholder subgroup	cluster organisation
Position in the network	<p>Business Upper Austria develops, coordinates and runs Upper Austria's RIS3 strategy since 1998. It is the Business Upper Austria's centre of competence for cross-company cooperation in Upper Austria. At present, more than 2.300 members of the Biz-up collaborates successfully with each other. The members of Biz-up benefit of the professional, personalized support, project management skills & cooperative solutions tailor-made for specific needs.</p> <p>Business Upper Austria acts as a business agency with the clear aim to strengthen and further develop the region. The main areas of Biz-up are:</p> <ul style="list-style-type: none"> ☐ Securing and expansion of companies, increasing their competitiveness ☐ Enhancing innovation and internationalization of business and industry through cooperation and broad support within technology and know-how transfer, research and innovation funding schemes ☐ The settlement and foundation of new and innovative companies
Importance for GoDanuBio	Business Upper Austria bundles competences from eight different clusters. Especially the food cluster and the cleantech cluster have important competences in the field of bioeconomy, which is very crucial for GoDanuBio.

Stakeholder group	Academia & Research
Stakeholder subgroup	Competence centres
Position in the network	<p>Wood K Plus is an important research organisation in the area of wood and wood-related renewable resources in Europe. Featuring core competences in the fields of materials research and process technology along the complete value chain – from raw material to finished products, developing methods and basics and perform applied research on the economy-science interface, in order to enable resource-efficient management in the circular bioeconomy.</p> <p>As COMET K1-Center of the COMET Programme – Competence Centers for Excellent Technologies - the Center is funded by the Austrian ministries BMK, BMDW and the federal states UpperAustria, LowerAustria & Carinthia. The programme COMET is operated by the Austrian Research Promotion Agency (FFG).</p>
Importance for GoDanuBio	Experts on the Fields of Bio – and Wood Technology, can be invited to regional Stakeholder events and can be subcontracted for research activities;

Stakeholder group	Public
Stakeholder subgroup	1. Local Government 2. Regional Development agencies
Position in the network	<ol style="list-style-type: none"> 1. Government of Upper Austria, Directorate for National Planning, Economic and Rural Development 2. Regionalmanagement OÖ GmbH (RMOÖ) is the regional development agency of the province of Upper Austria. As Upper Austria's competence centre for regional development, it is the point of contact for municipalities, associations, institutions and regional actors who want to implement initiatives for the development of their region. The goal of Regionalmanagement GmbH is to secure and strengthen the attractiveness, quality of life, competitive strength and cross-border cooperation of the Upper Austrian regions. This includes dynamic economic development, social cohesion, attractive jobs, sustainability and long-term oriented spatial planning as well as the positive development of soft location factors such as housing, leisure, nature and cultural offerings in the Upper Austrian regions.
Importance for GoDanuBio	Both organisations have a large network of important stakeholders in Upper Austria and are therefore of great importance, especially for the topic of participative governance.

Stakeholder group	Society
Stakeholder subgroup	Informal civil organizations
Position in the network	
Importance for GoDanuBio	

4. Good Practice Examples

4.1 Regional funding scheme related to Upper Austrian S3 strategy: Cluster Cooperation Project on Dry fermentation reactor, coordinated by the Cleantech-Cluster

Development of a modular and stationary dry fermentation reactor in concrete construction to produce biogas from municipal waste in markets with warmer climates.

Anaerobic fermentation (biogas production) is a proven and often successfully used technology in agriculture and waste management. Especially in the case of homogeneous waste and farm manure, its use is relatively unproblematic. The situation is different with municipal waste (household waste) which, due to its inhomogeneity and composition (plastic, paper, stones, glass, biowaste), causes major problems for conventional fermentation plants. The technology developed in this project is now being offered on the market by the project partners and is to become a core product of the participating environmental technology companies in the future. The very ambitious goals of designing the system so cost-effectively that the costs would be covered purely by the feed-in tariff could not be achieved. However, thanks to subsidies, the technology should nevertheless achieve initial success on the market very quickly.

4.2 Regional funding scheme related to Upper Austrian S3 strategy: "From fly to fish", coordinated by Food Cluster

Supposed biogenic waste becomes feed for larvae, which are pressed in a new process and thus become sources for three further value chains. As the main theme of the project, the larval protein becomes high-quality feed for juvenile fish and becomes a sustainable alternative to common feed, which until now has mainly been produced from fish meal from the by-catch of international deep-sea fishing. This results in regional, sustainable upcycling instead of the exploitation of resources.

<https://www.lebensmittel-cluster.at/kooperationen/cluster-kooperationsprojekte/detail/cooperation/von-der-fliege-zum-fisch>

4.3 BioBASE - Innovation platform for bioeconomy and circular economy

This platform serves as a central information hub for economy, research, local administration and politics and brings all the information and people together. The BioBASE competence network is the ideal basis for networking players from industry and science. In consequence it is the ideal surrounding where innovations arise the initiation of new projects between companies and researchers.

BioBASE developed a competence map, a database listing ongoing national (and subsequently also international) activities and actors. This compilation of active organisations is intended to visualise the strength of the bioeconomy & circular economy in our economic and social environment. The competence map links fields of activity of companies with fields of activity of research institutions and educational institutions as well as public sector bodies. For newcomers to the bioeconomy and circular economy, the Competence Map provides an initial overview, while established actors are supported in their search for further intra- and intersectoral cooperation.

As bio and circular economy is important to reach the SDGs the project also focuses on awareness measurements to bring the thematic into the society.

<https://biobase.at/>

4.4 Project: IEA Bioenergy Task 42 " Biorefineries in the bioeconomy of the future " - Research cooperation International Energy Agency Bioenergy for biorefineries with Wood K plus

The IEA Bioenergy Task 42 "Biorefineries in the Bioeconomy of the Future" pursues the strategic goal of advancing the establishment of biorefineries. In biorefineries, biomass is processed into a range of marketable bio-based products and energy through process integration. This combined production of products and energy from biomass represents a sustainable system solution that does not rely on fossil raw materials and supports the circular economy. Therefore, the operation of biorefineries can significantly reduce the emission of climate-relevant emissions and make an active contribution to sustainable development.

An open-access tool for the assessment of biorefineries was developed, which systematically supports a TEE analysis (Technical/Economic/Environmental Assessment) of biorefinery processes. The results of the analysis of biorefinery processes in the form of case studies were summarised in so-called "Biorefinery Factsheets". Specific market and technology reports were prepared for selected product segments, such as biobased fibres and materials, biobased chemicals and lignin, which present the potential of these products for the establishment of biorefineries and summarise important information on the market environment.
<https://wood-kplus.at/de/partner/foerderprojekte/task-42ff>

4.5 lab of tomorrow – new ways to new business

A lab of tomorrow is an incubation program for new sustainable business in developing countries. While separate collection and recycling of biogenic waste has a long tradition in Austria and the value chain for these residues is well established the productive use of biogenic residues in the countries of the Western Balkans is not yet advanced. To this end, the lab of tomorrow acts as a catalyst for the development of tailor-made, innovative business solutions for local SDG challenges and facilitates profitable joint ventures or start-ups owned and driven by the lab of tomorrow participants. There are numerous challenges along the value chain, starting with waste collection and separation or productive use, for example for energy purposes. Improving the value chain for biogenic residues can open up new income opportunities for the local population or, for example, access to renewable energy sources and is therefore a lever for achieving the SDGs.

How the lab of tomorrow processs works

- Business case sourcing: We identify unmet needs that can be transformed into business cases in the West Balkan using the DesignThinking method. We interview those affected by challenges, topic experts and public sector actors.
- Participant sourcing & matching: We source local and European entrepreneurs and company reps and match them in international, interdisciplinary teams of 5.
- Business Design coaching: We facilitate an ideation sprint and a subsequent 4-month Business Design program to enable our participant teams to create new sustainable joint ventures or start-ups that tackle the identified business cases.
- Partner network: We help our participant teams gain access to follow-up programs, investors, mentoring & collaborators.

4.6 ÖKOLOG – Programme

The aim of the ÖKOLOG programme is to encourage and motivate schools to become active in the field of environmental education. Step by step, concrete topics such as saving energy, avoiding waste, ecological school grounds design, healthy snacks, etc. are made visible at the schools. At the moment in more than 600 ÖKOLOG schools of all school types and 10 teacher training colleges teachers, students and pupils learn and work together on environmental and bioeconomic themes.

In each province, as well as in Upper Austria, a separate regional team has been set up to support the schools in the ÖKOLOG network. The individual regional teams are important contact persons. For example, they serve as an information hub, but also offer workshops or provide materials. In many regional teams, representatives of public agencies (e.g. environmental agency), the business community, school partners or NGOs also participate.

<https://www.oekolog.at/regionalteams/>

4.7 Model region for organic recycling management MELK & SCHEIBBS:

The Municipal Environmental Associations (GVU) Melk and Scheibbs are applying to become an Austrian model region for bio- and circular economy. Educational and research institutions, essential companies and 58 municipalities are developing concepts and projects for a sustainable region.

The first projects range from market gardening to green gas, from the reduction of microplastics to climate-positive farms.

<https://modellregion-melk-scheibbs.at/>