Interreg
Danube Transnational Programme
GoDanuBio

Best Practice Brochure
The mobilization of actors for the Circular Bioeconomy

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For further information about the GoDanuBio project, you will find a short description in Section 4 of this document. To learn more and to download additional resources please refer to the project website
https://www.interreg-danube.eu/godanubio

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LIST OF ABBREVIATIONS

AP	Associated Partner
DTP	Danube Transnational Programme
ERDF	European Regional Development Fund
EUSDR	European Union Strategy for the Danube Region
FBI	Forest Based Industry
H2020	Horizon 2020
IPA	Instrument for Pre-Accession Assistance
NGO	Non-Governmental Organisation
OP	Operational Programme
PP	Project Partner
R&D&I	Research, Development, and Innovation
RIS3	Research and Innovation Strategies for Smart Specialisation
SME	Small and Medium-Sized Enterprise
VC	Value Chain

GLOSSARY

Best practice

A working method or set of working methods that is officially accepted as being the best to use in a particular business or industry, usually described formally and in detail.[1]

Bio-based Economy

The production of renewable biological resources and the conversion of these resources and waste streams into value-added products, such as food, feed, bio-based products, and bio-energy. Includes both traditional and emerging sectors, i.e., agriculture, forestry, fisheries, food and pulp and paper production, as well as parts of the chemical, bio-technological, and energy industries.

Bioeconomy

The Bioeconomy encompassing the sustainable production of renewable resources from land, fisheries and aquaculture environments and their conversion into food, feed, fibre bio-based products and bio-energy as well as the related public goods is an important element of Europe's reply to the challenges ahead. The Bioeconomy includes primary production, such as agriculture, forestry, fisheries and aquaculture, and industries using / processing biological resources, such as the food and pulp and paper industries and parts of the chemical, biotechnological, and energy industries.[2]

Biomass

Biomass is defined as "The biodegradable fraction of products, waste, and residues from agriculture (including vegetable and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste."[3]

[1] https://dictionary.cambridge.org/dictionary/english/best-practice, last accessed 29.04.22
[2] https://ec.europa.eu/research/bioeconomy/policy/bioeconomy_en.html, last accessed 29.04.22
[3] https://eea.europa.eu/help/glossary/eea-glossary/biomass

Business support organisation	Chambers of commerce; business clusters in the field of circular bioeconomy; economic development agencies.
Cluster	Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms within related industries, and associated institutions (for example universities, standards agencies, and trade associations) in a particular field that compete but also cooperate.[4]
Eco-innovation	Eco-innovation aims at significant and demonstrable progress towards the goal of sustainable development. Eco-innovation projects will therefore aim to produce quality products with less environmental impact while moving towards more environmentally friendly production processes and services. Ultimately, these projects build towards the goal of reduction of greenhouse gases or the more efficient use of various resources.[5]
EUSDR	The European Strategy for the Danube Region (EUSDR) is the Danube macro-regional strategy that provides an opportunity to improve cooperation within the Danube region. It has identified common goals and approaches for implementing them more effectively through transnational collaboration. EUSDR constitutes a strategic agenda that should guide relevant policy instruments at the EU, national, and regional levels by closely aligning and mutually reinforcing them.

[4]M. Porter (1998). On Competition, Updated and Expanded Edition. Harvard Business Review Book, p. 213

[5]European Commission (2015). Eco-innovation: When business meets the environment. FAQ: What is Eco-Innovation?

Participative Governance Participative Governance describes the involvement of various interest groups (citizens, local communities, NGOs, SMEs, and other stakeholders) in policy and decision making. It aims to harmonize views along all participants based on bottom-up principles instead of top-down policymaking.[6]

Programme Programmes are a vehicle through which to implement policies, e. g. a funding programme or R&D project in environmental technology. In addition to programmes, policies are also implemented through regulation (or regulatory framework, e. g. laws on consumer protection).

Smart Specialisation Strategies-S3 A Smart Specialisation Strategy is the strategic approach to economic development through targeted support for research and innovation. It involves a process of developing a vision; identifying the place-based areas of greatest strategic potential; developing multi-stakeholder governance mechanisms; setting strategic priorities; and using smart policies to maximize the knowledge-based development potential of a region, regardless of whether it is strong or weak, low or high-tech.[7]

Value Chain The Value Chain describes the full range of activities that firms, and workers partake in to bring a product from its conception to its end use and beyond. A value chain refers to the full lifecycle of a product or process, including the material sourcing, production, consumption, and disposal/recycling processes. This also includes activities such as design, production, marketing, distribution, and consumer support.[8]

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[6] https://unesdoc.unesco.org/ark:/48223/pf0000177568

[7] Foray (2015). Smart Specialisation, Opportunities and Challenges for Regional Innovation Policy, Routledge

[8] University of Cambridge (2017). What is a value chain? Definitions and characteristics.

1. RATIONALE

The aim of the Best Practice Brochure on the mobilization of actors for the circular bioeconomy is to deliver best practice projects, initiatives, and business models that already exist in individual regions participating in GoDanuBio or outside the consortium area.

Thus, a complementary overview of the strengths and weaknesses of each region is displayed.

The best practices serve to motivate stakeholders and regional governance to actively engage the circular bioeconomy by demonstrating viable future solutions.

Empowering rural-urban cooperation requires individual and institutional learning processes that facilitate the involvement of innovation actors, including the ones that have been neglected so far.
As discovered in the process of identifying best practice examples, the most effective measures would be:

Development of multi-actor cooperation in the bioeconomy
Multi-actor partnerships within the bioeconomy value chain in the countries of the Danube Region are of particular importance. Systemic and systematic change require complex cooperation interactions between local authorities and businesses on the local level. There are several ways of mobilizing local actors such as the generation of bioeconomy clusters or the set up and management of a (web-based) bioeconomy cooperation platform to advocate opportunities and link policy with financial streams.

Strengthening local businesses in bioeconomy
The availability of bioeconomy resources in the Danube Region represents a solid base for the development of valid business models and of a flourishing entrepreneurial spirit. However, lack of knowledge about the bioeconomy sector in general, limited funding opportunities, lack of involvement from the local authorities lead to a reduced interest by producers to shift towards a bio-based economic model.

Raising awareness about circular bioeconomy processes

The success of circular bioeconomy processes at regional level is strongly related to community involvement. In that respect, experience shows that bioeconomy initiatives are of a rather bottom-up nature. However, as bioeconomy is part of the wider innovation concept, it is not possible without individual and institutional learning efforts which should also be driven by systematic education initiatives of a top-down character. In addition to that, the exchange of best practices from other regions/countries facing similar problems is the most effective way to drive structural changes. Many regions develop small or large-scale awareness-raising and dissemination activities to support the deployment of the bioeconomy. Events are also an important tool to bring together all stakeholders of the bioeconomy innovation ecosystem.

Setting up the regional/national policy framework with support instruments for SMEs including a financial and non-financial incentive system in support of a circular bioeconomy

The development of national/regional dedicated policies and strategies is vital for the generation of circular bioeconomy ecosystems. The strategies are influenced by or align with the EU policy on the bioeconomy that calls for a participatory approach that engages citizens and end-users. These must be accompanied by financial and non-financial support instruments, in an integrated manner and based on a continuous dialogue with the most relevant actors of the bio-based value chains. Support measures can range from administrative simplifications and fewer regulatory requirements to energy/waste taxation levels and fiscal incentives such as tax exemptions, thus reducing social contributions on innovative processes related to the bioeconomy. Finally, direct financing in the form of grants is an important instrument to involve companies, especially SMEs, in bio-economisation processes.

The examples presented in the Best Practice Brochure are based on the information given by the project partners of GoDanuBio. Information is provided without assuming any legal responsibility for correctness or completeness.

2. BIOECONOMY - a short overview

Bioeconomy includes all biomass-related applications and valorisation routes, including human food and animal feed. There are multiple definitions in circulation: "A bioeconomy can be defined as an economy where the basic building blocks for materials, chemicals and energy are derived from renewable biological resources (McKinsey, 2013)[9]. The biobased economy is part of the broader bioeconomy - focusing on the transition from the use of fossil fuels to renewable biomass in non-food applications.

The European Bioeconomy Strategy (2012)[10] defines the bioeconomy as a concept that covers "all sectors and systems that rely on biological resources (animals, plants, micro-organisms, and derived biomass, including organic waste), their functions, and principles. It includes and interlinks land and marine ecosystems and the services they provide; all primary production sectors that use and produce biological resources (agriculture, forestry, fisheries, and aquaculture) and all economic and industrial sectors that use biological resources and processes to produce food, feed, bio-based products, energy, and services."

The Review of the Bioeconomy Strategy (2018) [11] refocuses the actions to better support the 2030 Sustainable Development Goals (SDGs) and new EU policy priorities to 2024 (developing a strong and vibrant economic base; building a climate-neutral, green, fair, and social environment; protecting citizens and freedoms; as well as promoting European interests and values on the global stage).

To be successful, **the European bioeconomy needs to have sustainability and circularity at its core**. This will drive the renewal of our industries, the modernisation of our primary production systems, the protection of the environment and would enhance biodiversity.

Bioeconomy is a challenge to the concept of sustainable growth. In the last 5 years, the concept of circular economy has become highly relevant for the bioeconomy. **A circular economy** is a regenerative system in which resource input and waste, emission, and energy leakage are minimised by

slowing, closing, and narrowing energy and material loops. This can be achieved through long-lasting design, maintenance, repair, re-use, re-manufacturing, refurbishing, and recycling. This contrasts with a linear economy which is a 'take, make, dispose' model of production. (McArthur Foundation, 2012)[12].

Bioeconomy has enormous potential for the creation of millions of green jobs especially in rural areas; to reduce atmospheric emissions and dependence on fossil resources; to introduce innovations in agriculture, aquaculture, forestry and other industries; as well as the restoration of the ecosystem, and its bio-diversity .

The action plan of the EU Bioeconomy Strategy focuses on three key aspects: a) developing new technologies and processes for the bioeconomy; b) developing markets and competitiveness in bioeconomy sectors; c) pushing policymakers and stakeholders to work more closely together.

[9] https://www.mckinsey.com/~/media/mckinsey/dotcom/client_service/sustainability/pdfs/towards_the_circular_economy.ashx

[10] https://ec.europa.eu/research/bioeconomy/pdf/official-strategy_en.pdf

[11] https://knowledge4policy.ec.europa.eu/publication/updated-bioeconomy-strategy-2018_en

[12] https://archive.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail

The Bioeconomy is seen as a game changer, with a need for an integrated approach towards the generation of new innovative products. The creation of new bio-based value chain developments is to be seen as a complex problem, especially regarding the EU bio-based landscape (small scale), characteristics, specific objectives, and frameworks. The following dimensions can be distinguished:

- **cross-sectoral:** connecting different sectors: new value chains to be developed from biomass production linking bio-based products from the agricultural sector with the chemical or energy, construction, or materials industries etc.

- **triple helix interplay**: business, research and government and extension with the civil society towards a quadruple helix collaboration. This means connecting different domains (public, private, society and knowledge) with their own values, cultures, and languages.

- **cross-regional value chain development**: connecting regions with biomass availability to regions with processing facilities, industries, knowledge centres - bringing together knowledge, capacities, and investments.

- **cross-disciplinary:** natural and human science, plant science, bio-based, environmental, and economic research, and valorisation of knowledge (fundamental research, applied research, education and innovation).

- **integrated approach**: between the economy, climate, energy, biodiversity, food security; with ensuing technological, organisational, financial, and cultural challenges.

To deal with the complexity of different partners, cultures, perspectives, disciplines, domains and phases in the development processes, suitable management concepts and techniques are needed. These concepts offer conditions for innovations, collaborations, and investments, and allow the ability to steer, manage and coordinate the spread of the bioeconomy in European regions.

The Danube Region represents a perfect platform for the development of the bioeconomy. However, there is a lack of the supporting framework, which could facilitate the process. The mobilisation of actors (policymakers, academia, and other stakeholders) along the bio-based value chains should enhance cooperation to favour the transition to a dominant bioeconomy.

In the execution of the strategies and policies focused on the bioeconomy in the Danube Region, different gaps between practices and bio-based solutions are identified **in this brochure**, concerning rural approaches, entrepreneurship, education, support structures, financial and non-financial support, and various innovative initiatives/projects.

1.BEST PRACTICES

3.1. Multi-actor cooperation in bioeconomy

3.1.1. Green Start-up ecosystem: Baden-Württemberg

Title of the good practice
Green Start-up ecosystem: Baden-Württemberg

Location of the good practice
All regions of Baden-Württemberg

Start date of the good practice and (if applicable) end date
Ongoing

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

30% of young companies in Germany are now attributed to the green economy[13]. Baden-Württemberg (BW) supports start-ups in the life sciences and bioeconomy sectors with an extensive network of actors. Around 20% of this network are bioeconomy players[14]. Start-ups can receive support in all regions of BW.

The first step is supra-regional start-up support, especially for young companies in the orientation, planning and start-up phase. Those interested in founding a company can receive initial advice via start-up and innovation vouchers, offering intensive 1 to 1 consulting for start-ups. Bioeconomy is one of the topics covered here. Building on these initial consultations, accelerators come into play up to the growth phase. The accelerators offer a strong network, intensive mentoring and access to investors and funding. The next step for start-ups is to position themselves in the market and attract the attention of investors and partners. There are events and awards such as the "Kick-Start Green Innovations - KIGI" event, which took place for the first time in May 2022. Green tech start-ups can network with each other, receive coaching, and pitch their ideas to investors and industry representatives.

Prizes are awarded to the best ideas and prospects. Further activities are currently emerging and developing. For example, there is already an initiative called "Start-ups in the Bioeconomy", in which BIOPRO Baden-Württemberg GmbH is the lead partner.

This initiative started in June 2021 and has become a focal point for the targeted further development of the ecosystem of start-ups and SMEs in BW for the bioeconomy. At present, the network of this specialist initiative has 20 members and is to be expanded in coming years.

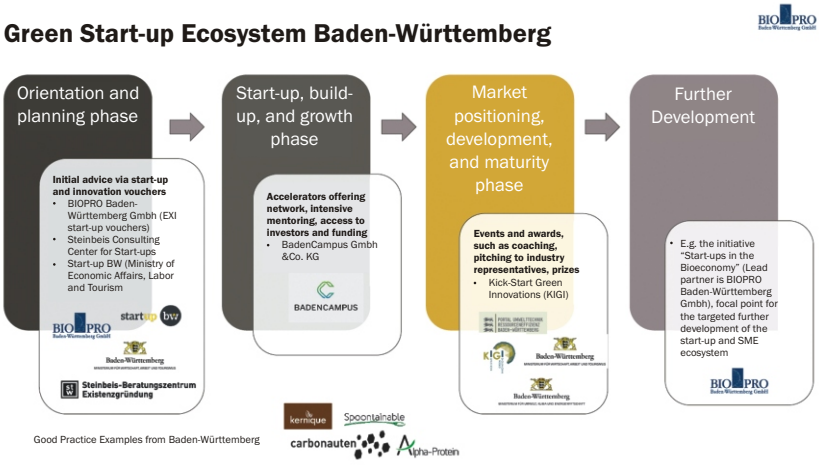

Figure 1. Green Start-up Ecosystem Baden-Württemberg.
This is only an exemplary representation; therefore, it is not complete and contains only selected actors.

[13] https://biooekonomie.de/nachrichten/neues-aus-der-biooekonomie/start-szene-wird-immer-gruener, last accessed 12/11/2021

[14] https://www.bio-pro.de/angebot/publikationen, last accessed 15/11/2021

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- Direct: Start-ups
- Indirect: SMEs and downstream industry (Start-ups represent innovation ramp for them)

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

This best practice is very successful due to its broad spectrum. Start-ups are optimally supported regardless of their status and there is a suitable offer for all new Companies. Above all, the possibility of receiving support at the very beginning makes it easier for many to get started. There are many opportunities for green start-ups in Baden-Württemberg. Examples of the functionality of the ecosystem are successful start-ups that have already emerged eg Spoontainable (edible ice cream spoons produced from fibres from residual products); Alpha Protein (production of insects as a sustainable source of protein); and carbonate (production of biochar to reduce CO2 emissions).

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

In general, the typical 'chicken-and-egg' problem can be observed here. For the implementation of bioeconomic issues, it can be problematic that raw materials are not available in unlimited quantities. In addition, the market is not yet sufficiently developed, as much is currently still in the scale-up phase.

Therefore, start-ups often do not yet have a pricing model in order to produce and sell larger quantities. However, this is generally a basic dilemma of the bioeconomic sector.

To improve this, framework conditions must change (e.g.,political, and legal framework conditions, such as waste legislation - in Baden-Württemberg this can have an inhibiting effect on the use of waste to produce products).

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

This best practice shows that supporting green start-ups is important for the implementation of the bioeconomy. While big industries sometimes must go along a more difficult path to take up bioeconomic topics, start-ups can start directly with their ideas and succeed. For example, bio-based products and solutions can be introduced to the market more quickly, utilising funding programs and opportunities are probably key factors for best implementation. In general, the individual building blocks (such as the BadenCampus) are easily transferable. The entire project chain is a suitable role model for other regions. The advice for them is to analyse existing structures and expand them based on the proposals from Baden-Württemberg.

Further information

Link to where further information on the best practice can be found

Contact:
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3.1.2. South Bohemian Association for Bioeconomy (SBAB)

Title of the good practice
South Bohemian Association for Bioeconomy (SBAB)

Location of the good practice
Ceske Budejovice, South Bohemian Region, Czech Republic

Start date of the good practice and (if applicable) end date
June 2020 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The SBAB was established in 2020 as an institutional outcome of the POWER4BIO project (10/20183/2021; H2020) by its Czech partner, the University of South Bohemia in Ceske Budejovice. Its primary mission is to support the sustainability of the POWER4BIO project results, respectively the creation of a regional bioeconomy strategy and implementation of bioeconomy in practice in the South Bohemian Region. It aims to build on local traditional bio-based resources and sectors and connect them with new technologies with high added value ensuring the sustainability of the region's development.
The SBAB encompasses the entire spectrum of professional activities to be carried out in the field of bioeconomy and the circular economy:

- bringing together people interested in bioeconomy and its application to industry, agriculture, health, and other areas of the economy for the benefit of human society and the environment.
- monitoring and supporting research, development, innovation, and implementation of new technologies.
- co-operation with relevant national and European technology platforms, clusters, and umbrella organizations; scientific and professional institutions as well as with manufacturers and operators of related technologies at home and abroad.

- elaboration and updating of the regional bioeconomy development vision, strategic research agenda and implementation action plan.
- targetted improvement of the quality and expertise of the workforce, including education, provision of internships, stays abroad, creation of curricula and new ways of raising qualifications.
- organizing educational and conference events, professional promotional and publishing activities.
- participation in the legislative and normative processes, increasing the competitiveness of Czech society, industry, and agriculture.

The SBAB has a legal form of NGO/NPO finance - from projects, subsidies, membership fees and customised services.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations, etc. benefited from this best practice?

The thematic scope of the SBAB and its 25 members (both natural persons and legal entities) enable the bioeconomy valorisation by the following beneficiaries:

- universities and R&D institutions
- regional and local public authorities
- regional chambers of commerce and agriculture
- bioeconomy related associations and their members
- regional agencies for innovation and entrepreneurship
- experts, farmers, entrepreneurs in the circular and bioeconomy spheres and local multipliers
- public bodies and individuals.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

From a regional perspective, the start of communication and cooperation among the regional bioeconomy stakeholders is the main benefit of the SBAB establishment.

Further, the bioeconomic potential of the region was evaluated and recognized, being represented both by traditional producers, such as fisheries, brewing, agriculture, forestry, municipal waste, and the new and emerging industries, such as algal biotechnologies, biogas, and bio-refineries. To address the identified shortcomings and legislative, administrative, and financial barriers, hindering the implementation of the bioeconomy concept at the regional level, the South Bohemian Regional Authority appointed the SBAB to act as the Regional Innovation Platform for Bioeconomy and included the smart specialization domain of bioeconomy in its RIS3.
The SBAB organizes bioeconomy courses both for university students and the National Network of LAGs and takes part in Czech and European (H2020) bioeconomy R&D projects.

Lessons Learned
What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The regional activities of the SBAB, and increased awareness of the importance of bioeconomy, resulted in the integration of this smart specialization domain in the National RIS3 Strategy.
The most limiting factor for the SBAB is the lack of national government engagement in bioeconomy and the absence of targeted funding.
To be done better: more intensive dissemination of practical examples and good practices from abroad; and international exchanges of experts to increase the activities and motivation of the SBAB members. The main obstacle to implementing this was, and remains, the COVID pandemic.
For the future: the expansion of cooperation with experts from other regions, especially from LAGs; project partnerships within the EU programs; co-operation with experts from the sector to make bioeconomy attractive for students; deeper engagement in the Czech Platform for Bioeconomy and BIOEAST Initiative (The Central-Eastern European Initiative for Knowledge-based Agriculture, Aquaculture and Forestry in the Bioeconomy).

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

Being the first and, so far, the only regional platform for circular bioeconomy in the Czech Republic, the SBAB represents a universal model for replication in any region of the Danube Region countries.
The NGO/NPO legal form and the concentration of experts and stakeholders make it possible to systematically address the local bioeconomy opportunities and potential.
Ideally, public funding should be available for its effective functioning including bioeconomy awareness building and promotion, information dissemination, education, networking, and internationalization.

Further information

Link to where further information on the best practice can be found

Contact: Mrs. Eva Cudlinova, Associate Professor, Department of Regional Management and Law, Faculty of Economics, the University of South Bohemia in Ceske Budejovice
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3.1.3. Hungarian Circular Economy Platform

Title of the good practice
Hungarian Circular Economy Platform

Location of the good practice
Hungary

Start date of the good practice and (if applicable) end date
29 November 2018 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The Circular Economy Platform was officially established in Hungary on the 29th of November 2018 as an initiative of the Business Council for Sustainable Development in Hungary (BCSDH); the Embassy of the Kingdom of the Netherlands, and the Ministry for Innovation and Technology. Fostering the shift to a circular economy is a great opportunity and the platform promotes this way of thinking.
The main aim of the platform is to accelerate the transition to a circular economic model by sharing knowledge, creating joint projects and collaborations. The Circular Economy Platform has a key role in creating a change of attitude and common thinking, shaping the community of change leaders who think and act in the same direction, and share business solutions that lead to real change.
On 28 November 2019, an agreement was signed between the Platform and the Dutch Circular Hotspot to help put the transition on a more dynamic path through international knowledge sharing. In 2021, a total of 93 companies and organizations joined the Platform. Every type of organization can join the community at no cost. The platform, with the lead of BCSDH, organizes events, forums and training for the members which are good opportunities for experience exchange and development. These events are sponsored by the platform members voluntarily.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:
Any interested organization. By 2021 December it has 93 members, mostly:

- SMEs, supply chain actors
- Regional Agencies and Institutes
- R&D entities, Universities.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Members meet several times a year through workshops and a yearly organized Summit to demonstrate good practices and discuss how to enhance progress for the circular transition in Hungary.
In the summer of 2019, the Circular Economy Platform, under the professional leadership of the Hungarian Business Council for Sustainable Development (BCSDH) and the professional support of Bay Zoltán Applied Research Non-profit Ltd., surveyed the domestic potential of the circular economy. The research aimed to identify the most important challenges and map the business solutions that have already been implemented. Nearly 90 organizations participated in the online questionnaire survey, 84% of which operate in the corporate sector, most of which are small and medium-sized enterprises. The publication presenting the results of the research also contains eleven implemented business solutions.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

Sharing not only good practices, but also bad practices, among partners is extremely beneficial! The exchange of knowledge helps the development of partners and the recognition and dissemination of business models for the circular economy.
A weak point is the fact that activities are limited because they are financed voluntarily by the members of the platform.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

Establishing a platform that deals with the circular economy and/or the circular bioeconomy is easily adaptable to all regions. A co-ordinator organization and conscientious members committed to environmental issues are needed.

Further information

Link to where further information on the best practice can be found

Contact: Iren Marta (BCSDH), director

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Website: https://bcsdh.hu/home/

3.1.4. Rural HUB

Title of the good practice
Rural HUB

Location of the good practice
Village Vrmdža, Municipality Sokobanja, Eastern Serbia

Start date of the good practice and (if applicable) end date
2010 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Until a few years ago there was nothing to distinguish Vrmdža, a village 230 km south-east of Belgrade, from a thousand other old and emptying Serbian villages. Today, fast broadband expansion, and better infrastructure in general are making Serbian rural revival far more of a possibility than it would have been only a few years ago. But the villages still need more individuals with a vision to force the pace of transformation. In the village of Vrmdža, the prime mover (an enthusiast from the city of Belgrade) started in 2010 a Centre for Socially Responsible Entrepreneurship within a Rural HUB as a co-working place. The development strategy was based on the concept of a rural model of a sustainable eco-village and is achieved through collaboration between people from an urban background and traditional farmers from this village. The collaboration is based on preserving, enhancing, and retro-fitting the existing village, its values and lifestyle, while introducing selected modernization.
Rural HUB is used for networking, sharing knowledge and experience, capacity building, mentorship and organizing different kinds of activities and events important for the promotion of this idea and the concept of sustainable communities. In the HUB space, innovative, environmentally responsible individuals and organizations can work, meet, learn, and connect.

The activities are focused on comprehensive educational programs, business design training and application, assistance and advice, how to use social media education, workshops on the development of unique touristic offers, specific domestic products and services, the development of sustainable farms, green jobs preparation, and service-sector learning opportunities. Rural HUB also works on the development of its local community by using and developing its products and services: locally produced and organic food, eco-tourism facilities and accommodation capacities, services, craftworks, etc. New people come with new ideas establishing new businesses eg adrenaline tourism, eco-construction, and 'tester' events - such as climbing festivals, eco and ethnic-culture film festivals. The initiative is financed mainly by private resources and to a lesser extent with donor funds through projects.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiaries are:

- Local communities,
- Individuals of all ages living in rural areas and wishing to start environmentally responsible and innovative, individual, or family Businesses,
- Individuals from cities who want to work on their business idea or networking to revive local rural communities.

In particular, activities are addressed to young people and women.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

At the Hub, new local brands have been created to market produce and local tourism offer developed in ways that no one imagined possible before. Villagers attend seminars on financial management and learn about how to promote their products via social media.

Also, a framework for innovative rural practices was created, where young people become familiar with rural surroundings and where their knowledge of modern technology is used for the creation of new attractive content about the village to promote work and life in it.

The applications for the interactive map "Through Vrmdza and Centuries" were developed as a form of innovative promotion of the offer of the Vrmdza village in the context of impact tourism.

Once-tumbling-down houses are being restored. Internet-savvy villagers are marketing their organic produce and ecotourism offers - even a “floating yoga” studio - on social media.

The HUB also coordinates mentorship networks linking professional women in Serbia with women in Vrmdza and elsewhere, while women in Vrmdza can likewise share their experiences with others. The impact is return migration, local young people - and those born abroad with roots in Vrmdza - have begun to be much more interested in living and working in the village.

At the European Enterprise Promotion Award (EEPA), Rural HUB was recognized as a national winner for 2018 in the Green Markets and Energy Efficiency category.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The importance of knowledge transfer, the use of knowledge and skills of the natives and connecting these with the knowledge and skills possessed by the newly arrived inhabitants were highlighted. Ensuring everyone can benefit is essential to create visions and long-term business development strategies. The strongest point is the fact that the whole community is involved in the functioning of its Rural HUB. The emphasis is on the individual and the values he/she possesses that can be used for the general benefit of both the individual and the community in which he lives.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The development of the HUB model is suitable for replication in rural areas through:

- Promotion of sustainable living via the eco-village model across the country and region,
- Open dialogue on sustainable living development policies and measures among the relevant stakeholders,
- Sustainable development education workshops and training for the local community,
- Development of human resources in eco-village design and social business, especially from village,
- Raising awareness of diverse aspects of sustainable living.

Further information

Link to where further information on the best practice can be found

Contact: Mrs Dragana Tomić Pilipović, founder, HR consultant and mentor
E-mail: draganat@cdop.rs
Website: https://ruralhub.rs/, www.cdop.rs

3.1.5. Sfântu Gheorghe Business Incubator

Title of the good practice
Sfântu Gheorghe Business Incubator

Location of the good practice
Sfântu Gheorghe, Covasna County, Romania

Start date of the good practice and (if applicable) end date
2006 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Started in 2006 with the support of the UNDP - United Nations Development Programme, the Business Incubator of Sf. Gheorghe has become one of the major actors in the regional innovation ecosystem. Besides the incubation services (49 companies as of 2021), the incubator hosts a business accelerator and a digital innovation hub.
Of particular importance is the role of the business incubator as facilitator of regional clusters. Since 2010 all regional clusters have been resident in the business incubator, i.e.:

- Pro-Wood Regional Clusters in forest-based industry,
- Green Energy Innovative Biomass Cluster in the field of bio-energy Wellness Tourism Cluster Transylvania in the field of sustainable tourism,
- Agro-food Innovative Cluster from the Central Region of Romania in the field of agro and food sectors,
- Transylvania Textile and Fashion Cluster targeted on the circular economy in the textile sector.

This approach fostered the exchange of best practices, institutional and individual learning processes and resulted in the establishment of valid cluster business models. In addition to that, all clusters in the incubator embarked on a “bioeconomy” journey and are now committed to creating

and implementing innovative projects applying the sustainable development, circular economy principles and to raising the general awareness of the stakeholders, through the involvement of local public authorities, regional public agencies, and R&D entities.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- SMEs, supply chain actors,
- Local Public Authorities,
- Regional Agencies and Institutes,
- R&D entities, Universities,
- Experts and catalyst entities,
- General public.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Through the clusters the ecosystem of Business Incubator House in Sfântu Gheorghe implemented over 20 national and international projects in Horizon 2020 (e.g., Biovill, Be Rural, Foresda, Rosewood), DTP (DanuBioValNet, GoDanuBio); INTERREG Europe (STRING); COSME (Cosmenerg, Furniture Go International) involving over 500 SMEs.

It created and supported tens of start-ups; implemented over 200 small- and medium-sized bio-energy projects in rural and urban environments; organized over 100 national and international conferences, exhibitions and different workshops and site visits; hosted several international experts and researchers etc. In addition to this, many stakeholders and citizens were involved in these activities.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The importance of knowledge transfer is essential to creating visions and long-term business development strategies.

Current challenges such as the Green Deal, use of renewables, cascading this approach to forest-based industries, circular economy principles, etc. can be transferred into the business ecosystems, as shown by the example of the Business Incubator House in Sfântu Gheorghe.

The hardest part of the dissemination is to engage SMEs and stakeholders in innovation and new pathways - to be and become pioneers in different business sectors.

A weak point is the fact that activities are financed on a project basis only. Therefore, basic public financial support needs to be long-term funded for such business incubation services.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of the Business Incubator can be replicated in medium-sized towns in each country of the Danube Region. However, in doing so, the availability of highly-experienced human resources and real support from local public authorities and the business sector are vital. The so-called "copy-paste" approach is not possible, it is, therefore, advisable to adapt the model according to local needs and regional specific aspects.

Further information

Link to where further information on the best practice can be found

Contact: Mr Lajos Vajda, executive director,
E-mail: greenenergy55@gmail.com
Website: http://www.incubatorcovasna.ro/

3.1.6. Living Laboratory InnoRenew CoE: User-Centered Innovation and Development

Title of the good practice
Living Laboratory Inno-Renew CoE: User-Centered Innovation and Development

Location of the good practice
Izola, Slovenia

Start date of the good practice and (if applicable) end date
2015 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Living Lab Inno-renew was formed in 2015 as part of the Inno-Renew Centre of Excellence, which is an independent research institute. The Living Lab acts as an international science, industry, policy and civil society hub and an innovation platform that facilitates discussion on the development, testing and implementation of creative and innovative ideas, concepts and policies addressing challenges of the wood-based value chain and its role in a circular economy.

It is a user-centred organization that fosters a culture of open innovation and develops new value chains and business models that meet user-identified needs. Users directly contribute to value creation and are integral to the development process through Living Lab activities. Living Lab Inno-Renew provides an opportunity for members to work together to jointly develop new ideas, products, and services.

Living Lab Inno-Renew accelerates Slovenia's development of scientific excellence in a wide range of fields related to renewable materials: wood products, construction, biology, polymers, social sciences, computing, mathematics, psychology, kinesiology, modelling, simulation.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiaries are 24 members from Slovenia and 96 other members from 28 countries; plus users of the outputs (products and services).

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Living Lab Inno-Renew is connecting academics, researchers, industry members, policymakers, and users together to generate and validate ideas, products, and services. It aims at developing new approaches to tackle common challenges.
Living lab organizes workshops and other activities, where it brings together the respective stakeholders who jointly develop new projects and solutions (products/services).

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The collaboration between science and industry is of great importance for bioeconomy development. When there are also policymakers involved this means an even greater impact. Therefore, the Living Lab InnoRenew approach is a great example of multi-stakeholder collaboration, also because of the transnational dimension.
The challenging part is first to obtain funds for the research activities, which can result in viable products and services and second the transfer of the solution to the market. This might be challenging especially for the companies that need to invest in new technology.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of the Living Lab Inno-Renew can be replicated in other bioeconomy sectors in any country of the Danube Region. However, an umbrella institution or organization of partners is needed to establish and fund the formation and activities of such a lab. The example of Living Lab Inno-Renew, which was born within the Centre of Excellence, could serve as a role model.

Further information

Link to where further information on the best practice can be found

Contact: PhD Andreja Kutnar, director,
E-mail: coe@innorenew.eu
Website: https://innorenew.eu/

3.1.7. Landscape Recovery Program of the Košice region

Title of the good practice
Landscape Recovery Program of the Košice region

Location of the good practice

Each of the 6 Water Councils that have been created consists of representatives of local government, regional authority, district authorities, agriculturists, activists, volunteers, forest wardens, woodlanders. The overall number of Water councils 'members is 120.

Territorial division:

-Abov (Košice and Košice surroundings)

-Gemer (Rožňava)

-Spiš (SpišskáNováVes and Gelnica)

-Zemplín I. - Trebišov

-Zemplín II. - Poondavie (West-side of Michalovce)

-Zemplín III. - Michalovce, Sobrance (Part of Michalovce and Sobrance as whole)

Start date of the good practice and (if applicable) end date
2019 - present

Description of the good practice

What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

On the 22nd of October 2018, the Council of Košice Self-Governing region approved a Landscape Recovery Program. The action plan was accepted in 2019, after a meeting was held with mayors, agriculturists, forest agriculturists, representatives of state administration, activists, and volunteers in individual regions as a start point for each of the named Water Councils.

The plans of the Water Councils of Košice Region within the Landscape Recovery Program 2021-2030 of individual regions included topics for comprehensive solutions for the WEF (water, energy, food) approach, like climate change effects on water supply; soil fertility; extreme heat and the occurrence of natural disasters.

Established Water councils aim to change the approach to the management of forest and agricultural land, as well as urban land, and to enable the establishment of water retention measures so that a substantial part of rainwater can be retained in the countryside.

Through the implementation of these measures, the region, in cooperation with partners, wants to contribute to the renewal of biodiversity processes, the increase of soil fertility, the increase of water resources and the improvement of the climate. In terms of practical implementation Water Councils were divided into 6 separate territories that work on plans for their own territories.

Key priorities regarding the Landscape recovery program:

2019 - In the first year of implementation of the Program, the activities of individual projects were proposed, which laid the foundations for systemic change leading to the supportive achievement of environmental safety in the Košice region through start-up projects: the establishment of Water Councils for 6 regions

2020 - 26 official meetings of individual Water Councils took place and drafted plans for integrated water protection.

2021 - The strategy for Water councils was fully approved by the regional authority, based on these six prepared methodologies, and officially approved by the national public authority.

2021 - Participatory governance was considered a suitable tool for Water councils' methodology which could lead to better decision-making, as knowledge from all the people involved is used.

2022 - Key priorities were set up: further elaboration of the methodology for the territories; organization of a regional conference; finding opportunities to finance activities; the possibility of involving a participatory budget in the Water Council ´s management.

In addition, the concept of the GoDanuBio project was presented officially during the interactive workshop organized by the Košice Self-governing region in January 2022 to find the possible synergies between Water Councils' functionality and project activities. Supportive tools are currently under consideration .

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- individual Water Councils consisting of members from the following stakeholder groups:
- local public authority, regional public authority, farmers, interest groups including NGOs, Regional Development Agency, land forest cooperatives, urban and land associations, activists, volunteers, SMEs, (approximately 120 active members).

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Water Councils aim to connect the links not only between water, energy, and food, but also the weather, climate change and biodiversity. The main goals are as follows:

- To implement water retention measures in the structures of forest, agricultural and urbanized areas of the districts of Košice and its surroundings in the amount of 14.5 mil. m^3, so that these structures can cyclically collect rainwater and return it to small water zones to replenish soil and groundwater reserves, saturate springs and reduce erosion activity. The measures implemented will retain rainwater, so that this water contributes to the restoration of biodiversity processes, increasing soil fertility, the creation of water resources and to the recovery of the climate.
- To slow down the runoff of rainwater from runoff spots, to reduce the drift of waste, soil, and nutrients from the area, so that even in times of heavy rains, clean water is running through streams and rivers, to minimize the risk of killing fish during floods
- To enhance cooperation of local governments and local stakeholders (forest managers, farmers, land, and real estate owners) and Košice self-governing region - enabling them to participate in the implementation of water retention measures in their territory.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The implementation of the Landscape Recovery program brings together people with different opinions and ideas, that might not be related to each other.

The biggest challenge was to bring different interested parties and stakeholders into one open discussion round. If all interested parties are allowed to participate in a project that concerns them, there is a higher likelihood of obtaining the desired results.

This point of view brought forward the idea of organising an interactive workshop in which the methodology of the Landscape Recovery Programme was endorsed, based on a participative governance approach.

Solutions that came out from the interactive workshop organized in January 2022 are:

- to support the functioning of Water Councils,
- to ensure the institutionalization of Water Councils
- to establish a participatory budget
- to support the visibility of the Water Councils system and its development
- to find possibilities for financing specific methodological manuals, experts, and conferences.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

Since the Water Councils were set up and established by the Košice Self-governing region, the whole package of knowledge transfer can be easily implemented in other regions through workshops and specialized training for beneficiaries.

The main points that can be transferred to other regions are the implementation of measures for the forest, agricultural and urbanized areas of the region, so that these structures can cyclically collect rainwater,

replenish soil and groundwater reserves, saturate springs and reduce erosion activity using all the latest technologies and practices.
To make the best practice as relevant as possible, it is important to connect the links not only between water, energy, and food, but also the weather, climate change and biodiversity.

Further information

Link to where further information on the best practice can be found

Web:

https://web.vucke.sk/sk/kompetencie/regionalny-rozvoj/program-obnovy-krajiny/

https://web.vucke.sk/files/sk/kompetencie/regionalny-rozvoj/program-obnovy-krajiny/metodika_vodne_rady.pdf

3.2. Strengthening local businesses in bioeconomy

3.2.1. New generation bio-stimulants for agri-business and floriculture

Title of the good practice
New generation bio-stimulants for agri-business and floriculture

Location of the good practice
Bulgaria (Sofia, Stara Zagora)

Start date of the good practice and (if applicable) end date
2019 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

On an annual basis, more than 1 million tons of sludge are formed in Bulgaria, which does not find effective and affordable ways to dispose of it. Therefore, they are disposed of in nature, where they pollute the environment, soil, and water. On the other hand, due to high population growth and increasing food needs, the agricultural industry uses excessive amounts of mineral fertilizers and pesticides that destroy soils, contaminate agriculture and water courses, which leads to significant health risks. It is a Sustainable Development Goal of the EU to reduce mineral fertilizers by 30% and pesticides by 50% by 2030. In response to these challenges Atlas Agro Science tackles the problems posed by the two industries (the pollution of waste from wastewater from sewage treatment plants and the poisoning of soils through the excessive use of chemical mineral fertilizers) by processing the sludge from wastewater treatment plants through a patented waste-free method and turning it into a 100% environmentally friendly liquid bio-stimulant for agribusiness and floriculture. In this way the innovative product solves two problems: helps regulate and control the disposal of waste, and protects the soil by eliminating the use of mineral fertilizers.

The benefits are not only increasing the growth and strength of the treated areas by up to 80% (and optimizing your fertilization costs by up to 50%) but also eliminating the need for mineral fertilizers by up to 100%.
Based on the above technology, the company has developed the following product varieties:

- Atlas Universal Aquapon - organic bio-stimulant for aquaponics systems and the irrigation of ornamental and flowering plants
- Atlas Universal Flora - organic bio-stimulant for flowering and ornamental plants
- Atlas Universal Grass - organic bio-stimulant for raygrass and lawn
- Atlas Universal Green - organic bio-stimulant for cobles and evergreen shrubs
- Atlas Universal Orchids - organic bio-stimulant for orchids, azaleas, rhododendrons

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

- Industry associations
- BIO-food producers
- Waste-water treatment facilities
- Farmers

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Applying the innovative techniques for the conversion of anaerobically degraded sludge from wastewater treatment plants can result in:

- up to 20% decrease in operating cost of water facilities and farmers
- up to 10% bigger yields on harvest
- 95% less impact on the environment compared to mineral fertilizers.

Also, the product achieves:

- healthy and ecologically clean soils
- 100% savings on expensive mineral fertilizers
- opportunity to restore the disturbed balance of organic matter in the soils in our country
- improving the resistance of plants to aerobiotic stress
- satisfying the need of plants for micro and macro elements
- strengthening the root system and restoration of damaged roots
- reducing the acidity of the soil and increasing the effect of organic matter.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The bio-stimulants are multi-component liquid additives for the agriculture sector, based on sludge collected from wastewater treatment plants. The greatest advantage is that the product is waste-based and manufactured through completely waste-free technology.

The hardest part of applying best practice is that the interested clients do not see the eco-dimension of the product as a valid selling point. Their main concern is on both domestic and international levels is saving money and/or increasing productivity. One of the greatest challenges of the company is to highlight the green credentials of the products. Its greatest added value is that it is a 100% ecological product via waste-free technology applying circular economy principles.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of best practice can be applied in each country of the Danube Region. The company may start partnerships with stakeholders from the region, including Waste-water treatment facilities and Recycling plastic packaging suppliers. The company may also cooperate with interesting start-ups for replication of the model.

Further information

Link to where further information on the best practice can be found

Contact: office@atlasagro.eu

Website: https://atlasagro.eu/

3.2.2. Miret Ltd

Title of the good practice
Miret Ltd

Location of the good practice
Barilović, Croatia

Start date of the good practice and (if applicable) end date
2018 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Miret is an innovative ecological brand and development company for natural fibres with a focus on sustainable solutions founded by two brothers - Hrvoje and Domagoj Boljar. Developed with new technologies and modern bio-based materials, the production of a sneakers substitute takes the classical approach but outperform in comfort. The main target is to reduce the use of petroleum derivatives and toxic chemicals in material production processes and the final product. The methodology includes using bio-based materials made from 9 plants and wool, keeping the supply chain localized (most of our manufacturing partners are in the EU, and our production facilities are in Croatia), using CO2 neutral deliveries, and optimization of production processes to reduce CO2 emissions, as well as materials and energy consumption.

Beneficiaries
Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The main beneficiaries are footwear companies that are interested in reducing the environmental impact of their products by incorporating

natural materials instead of synthetic textiles. Miret can use its expertise in natural materials to advise companies on which materials provide similar performance to the current synthetic textiles. The founders - Hrvoje and Domagoj - are also involved with the local start-up community (Zagreb Innovation Centre) to share their business expertise and knowledge.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Most sneakers are mass-produced using harmful materials like synthetic textiles, synthetic rubber, and other plastics. These are also the source of micro-plastics. Also, leather which is generally considered a "natural" material", is packed with toxic chemicals.

MIRET aims to reduce the negative eco-impact of the footwear industry by offering a viable, aesthetically pleasing, and cost-efficient alternative to sneakers made from oil derivatives or leather. Through the MIRET project, they are tackling UN Sustainable Development Goal 12 (Ensure sustainable consumption and production patterns), Goal 13 (Take urgent action to combat climate change and its impacts), and Goal 14 (Conserve and sustainably use the oceans, seas, and marine resources for sustainable development). MIRET uses DPD for all our logistics and has a CO2-neutral delivery policy across Europe.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

Implementation of this best practice teaches us that sustainability should not be a choice of the consumer but a necessity of the producer. Creating a product that removes the responsibility of the consumer was difficult because it required years of research and development to create MIRET sneakers. The goal for the future is to create an inherently circular, sustainably grown and produced, bio-based, toxic-free, CO2 neutral product.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of Miret can be transferred to any other region where there are similar bio-mass resources needed to produce shoes or other products.

Further information

Link to where further information on the best practice can be found

Website: https://www.miret.co

3.2.3. NAFIGATE Corporation

Title of the good practice
NAFIGATE Corporation

Location of the good practice
Prague, Czech Republic

Start date of the good practice and (if applicable) end date
2004 - till present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The NAFIGATE Corporation was established in 2004, they built upon the Czech technology Nanospider a licensed device to produce nano-fibres by ELMARCO. NAFIGATE Corporation had been established to speed up the transfer of innovative technologies to the global market. With the help provided by the Brno University of Technology and the Institute of Microbiology of the CAS, they developed Hydal biotechnology in 2012.
They were also exploring the application of nano-fibres to cosmetics. Thereafter NAFIGATE Cosmetics was established. NAFIGATE deals with significant problems that positively affect the lives of us all. Its vision is a better world - creating technology and application solutions with global potential. These solutions have clear added value and demonstrable environmental impacts.
It aims to build on local traditional bio-based resources and sectors and connect them with new technologies with high added value ensuring sustainability.
The NAFIGATE Corporation encompasses the entire spectrum of research activities to be carried out in the field of bioeconomy and circular economy:

- bringing together people interested in bioeconomy and its application in industry, agriculture, health, and other areas of the economy for the benefit of human society and the environment.

- monitoring and supporting research, development, innovation, and implementation of new technologies.
- other projects they are focused on: Hydal Biotechnology, P3HB Biopolymer, Cosmetics, Biomedicine, Sustainable Packaging, Smart Fertilizers.

The NAFIGATE Corporation is a small company which utilizes waste streams to produce novel materials with benefits, friendly to people and nature.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The thematic scope of the NAFIGATE Corporation enables the bioeconomy valorisation by the following beneficiaries:

- universities and R&D institutions
- agriculture
- pharma, biomedicine, healthcare, and cosmetic sector
- bioeconomy related associations and their members
- regional agencies for innovation and entrepreneurship
- SMEs
- experts, farmers, entrepreneurs in circular bioeconomy sectors and local multipliers
- public.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

NAFIGATE promotes the circular economy as a priority for the Czech Republic.

NAFIGATE seeks to clarify the ways of using waste materials to find a way to create novel materials.

Hydal biotechnology relies on micro-organisms and the ability of their metabolism to convert a feedstock into a product. NAFIGATE uses the

bacteria Cupriavidus-necatoras in micro-factories, where the transformation from waste oil to PHA occurs. Circular material P3HB is non-toxic, biocompatible, and fully biodegradable produced from waste. They plan to implement a technology for brewery malt waste upcycling. NAFIGATE received the Frost & Sullivan award for the nano-fibre water purification membrane and Hydal biotechnology, which downstream is enabled by a pilot line created in collaboration with VUCHT in 2015. In 2016 Hydal biotechnology won three more awards: the Seal of Excellence of Horizon 2020, the Eastern European Business Elite Awards, and the Top 10 Product Award as a part of the Shenzen Exhibition. The Hydal project received another award in the Innovation Sustainable Development category and 3rd place in the SGDs Awards.

Nanocleaner and Air Cartridges won the Excellent Product prize at the China Hi-Tech Fair in 2018. In 2021 Hydal project was awarded as Impact Star in Deloitte Technology Fast 50.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

Hydal's technology is more environmentally sustainable than waste oil re-refining technologies. Current re-refining technologies, such as vacuum distillation, are energy-intensive, whereas Hydal's fermentation-based technology uses less energy, in milder operating conditions. Additionally, by being fermentation-base, the Hydal solution is modular and can be easily scaled to the required capacity.

Current challenges such as the Green Deal; use of renewable energy; cascading approach to forest-based industries. Circular economy principles, etc. should be transferred into the business eco-systems. The main obstacle to implementing this was, and is, the COVID pandemic and lack of investors in the circular economy in the Czech Republic.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

NAFIGATE corporation represents a unique model which can be shown as a great example and replicated with a similar approach innovation from waste to novel materials.

Further information

Link to where further information on the best practice can be found

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3.2.4. The Clean Team Project Ltd in the Center Region of Romania

Title of the good practice
The Clean Team Project Ltd in the Center Region of Romania

Location of the good practice
The central region of Romania

Start date of the good practice and (if applicable) end date
April 2018 - June 2021

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The establishment of 'The Clean Team Project' start-up was financially supported by the Human Resource Development Programme - POCU, in the frame of project "Strengthening economic and social cohesion in the South-Muntenia Region and the Central Region of Romania".

The company is the very first social economy project in Ghelința Commune from Covasna County based on in-depth analyses of the current socio-economic situation which has outlined a well-defined need in the locality, both economically and socially. The basic activity of the newly established structure is landscaping services, public space arrangement and maintenance of green spaces in Ghelința Commune and its surroundings starting with a team of 5 people. At the same time, the green residuals and waste collected from the public space maintenance activities are converted into biomass fuel and commercialized on local biomass fuel markets. It has created 5 jobs within the company with a flexible work schedule, and adapted to the needs of the vulnerable employees involved in the company. The employment of 4 people belonging to vulnerable groups - Roma, socially marginalized people, poor people, the elderly - is intended to create an example to follow in the community. This proposed approach directly contributes to the integration of the marginalized population.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The direct beneficiaries of the social-economic structure are:

- 15 families benefiting from firewood annually
- 20 blind people receiving support around the houses, and firewood/yearly
- 19 children benefiting from IT tablets for digital education
- 2 awareness events/year on the environment and community sustainability
- minimum 2 school activities organized for children and young people on environmental protection
- 4 people employed from vulnerable/marginalized groups in the first year of implementation
- improving the standard of living of at least 3 local families via employment
- waste collection at the commune level together with the local community minimum 1 / year.

Other impacts on a local level:

- a stronger and greener community through the creation of socializing places and awareness events,
- reduce the segregation between local vulnerable groups and the local community,
- reducing migration among young people following an example of good practice in setting up a business based on personal knowledge and ambition,
- valorisation of an annual 1000 m^3 green waste with production of biomass fuel.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Green Circularity Program

The Clean Team Project Ltd is promoting and demonstrating that green waste can be converted into biomass fuel.

Reducing migration among young people following an example of good practice in setting up a business based on personal knowledge and ambition.

Biomass production is not only a renewable energy resource but also a significant opportunity for sustainable rural development. Through such an approach, the town of Ghelința in Covasna County won the title of "VILLAGE BASED ON BIOENERGY". Local achievements are part of the concept of a sustainable community, developed and facilitated by the Green Energy Biomass Innovative Cluster. The concept includes: identifying sources of wood waste at the local level (waste from felling trees in forests, wood waste from pastures, green areas, orchards, gardens, parks, households, etc.), collecting wood biomass with the help of people from vulnerable groups (social aspect), cultivation of energy willow to obtain wood biomass, logistics segment (grinding, storage, transport), boiler manufacturing, installation and commissioning of a biomass boiler and connecting users to this system (especially public buildings).

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The exploitation of biomass, in addition to the energy advantages, also represents benefits from the point of view of environmental protection, ensuring a sanitization of the territories, simultaneously with the production of a significant amount of clean energy.

The Clean Team Project Srl is eager to share knowledge and experience, help improve biomass management at the community level, promote local energy solutions from local sources, ensure clean energy for sustainable communities and multiply the example created in the locality Ghelința.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The Clean Team Project Srl can share the experiences regarding the local public space and landscape maintenance with biomass fuel production. Several rural municipalities from Neamt, Brasov, Harghita and Covasna counties visited Ghelința Commune.

Further information

Link to where further information on the best practice can be found

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3.2.5. Close the loop in a sugar factory

Title of the good practice
Close the loop in a sugar factory

Location of the good practice
Hungary, Kaposvár

Start date of the good practice and (if applicable) end date
2007 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The complete energy demand of the largest sugar company in Hungary is covered through biogas.
During the so-called campaign period of production, from September till January, an extremely large amount of heat and energy are needed for the processing of sugar beet, which used to be provided by natural gas. Due to the drastic increase in the price of fossil fuels and the decline in the agricultural and livestock utilization of the residues, by-products, of beet processing, new alternative solutions had to be identified to provide the necessary energy demand. This resulted in an intensive and effective research and development period by local professionals. The solution was found: the production of biogas from the beet residues through a fermentation process. A worldwide biogas plant with its technological development was put into operation for HUF 1.7 billion. Three fermenters were constructed for this purpose. The production of biogas started in October 2007. The amount of biogas produced is used to produce heat and electricity at the power plant in the factory, thus generating nearly 9 million cubic meters of natural gas per year.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- the factory
- sewage treatment plant
- public institutions operating in the town
- farmers
- public.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

The biogas plant generates bio-energy from a renewable energy source, through the breakdown of the fibre material of the beet plant. This bio-energy production and utilization do not negatively affect the environment. The beet plant through its physiological processes captures carbon dioxide from the air and out of this captured CO2 it builds up carbohydrates, fibres, and cellulose itself. During the fermentation process, through several steps, these carbohydrates are turned into biogas.

Great synergies could be made with this circular innovation. During the process, the fermentation liquid is sent to a sewage treatment plant increasing the efficiency of the water cleaning process. While outside the campaign period (February - August) the plant accepts other bio residues produced by the nearby farmers and the generated fermentation liquid is used in agricultural areas as a great bio-fertilizer decreasing the need for chemicals.

The biogas covers the energy supply of the factory and fuels the bus fleet of the city - even the city swimming pool is heated with it. In addition to that, thanks to the most recent innovation, the biogas produced outside the campaign period is cleaned with a membrane gas cleaner to produce natural gas and it is fed back, firstly in Hungary, into the natural gas grid.

This Hungarian plant is an ideal example showing how to close the loop.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

Intensive and effective research and development inputs by local professionals were needed to find and implement a well-functioning system to process the residues. The system is very sensitive to environmental influences and the quality of the input materials. The fermentation process is also dependent on the bacterium culture living in the processing place.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

To all rural localities that have biomass resources and similar plants.

Further information

Link to where further information on the best practice can be found

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3.2.6. Sustainable Land, Livelihoods and Energy Initiative - SLLEI

Title of the good practice
Sustainable Land, Livelihoods and Energy Initiative - SLLEI

Location of the good practice
Vojvodina region, Serbia

Start date of the good practice and (if applicable) end date
2019 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

SLLEI is one of the initiatives that support the country's ambitious strategy for transitioning to renewable energy while preserving and creating equitable employment. Started in 2019 with the support of key Republic of Serbia stakeholders and UNEP - United Nations Environment Programme, the implementing organization is E3 international, currently utilizing grant funds from the Austrian Development Agency, its own resources, and in-kind inputs from the pilot sites.
Serbia is highly dependent on coal for electricity and heating. About 70% of national energy production relies on low-energy lignite, leading to massive greenhouse gas emissions, air pollution, and land degradation. The estimation is that there are more than 100,000 ha of degraded land. By sustainable cultivation of fast-growing bio-energy crops on short rotation plantations (SRP), SLLEI supports energy security needs with a portfolio of solutions, restores degraded land, secures permanent tree areas on non-agricultural land, and ensures 'just transition' jobs for coal miners and others.
SLLEI applies bioeconomy solutions:
- short-rotation plantations of fast-growing trees (e.g., willow) and reed (Arundo) species to produce woody biomass and biogas used for heat and power.

- agro-forestry borders around the SRPs as economically beneficial buffers.
- permanent tree areas for long-term conservation, and sustainable use of timber and non-timber forest products; and
- support of new value chains for job creation.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary includes:

- national and local governments,
- private sector companies including Banks,
- environmental and social NGOs,
- chambers of commerce,
- potential users (district heating companies, national electric companies, industry),
- investors,
- farmer associations,
- other local groups, including future displaced coal workers, rural people seeking supplemental or full income.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

SLLEI solutions are currently being piloted on four different sites in Vojvodina Province, using abandoned and/or degraded agricultural land, on landfills and on coal mining land.

The activities are:

a) pilot plot selection, land preparation, planting, maintenance, monitoring/evaluation.

b) increasing areas for plantation - from 10 ha in 2021 there are already signed agreements for 100 ha. The initiative aspires to expand to Bosnian coal mines and Macedonia.

c) stakeholder engagement - raised interest and partnership from the big state power companies, local government, private companies, institutes for sustainable energy.
d) capacity building- training implemented with about 300 farmers and coal workers.
d) development of logistics - 2 Biomass market centres are opened
e) and development of a Business Model for the Prototype.
The impact of the activities is 75,000 hectares of bio-energy crops replace 10% of coal-powered electricity; bio-energy providing baseload in the renewable energy mix; 10.000 - 20.000 green jobs; and restored biodiversity and soil health on 100,000 hectares.
Major additional benefits include the protection of native forests from depletion; the creation of new innovative bioeconomy value chains and employment, improving air quality, restoring biodiversity, and providing greater climate resilience from flooding and heat.

Lessons Learned
What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The critical point in implementation is stakeholder engagement and fundraising for the start of the operations, because SRPs can be optimally harvested starting from year 3 and, commercial payback is possible from the 5th year.
The success of the initiative depends on the development of a bankable business model. But with this in place, even without carbon credits or ancillary income from related bioeconomy innovation opportunities, the project can yield over EUR 1B in profits for a diverse group of participants over the 20-year project life.
In the next phases SLLEI will work on long-term SRP biomass off-take agreements with industry, district heating companies, and the national electric company for their heat and power generation. Sustainable biomass production will develop value chains related to heat and power production. Also, it will be the basis for innovative new bioeconomy value chains e.g., for pharmaceuticals and fodder.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The approach of SLLEI to land restoration, bio-energy and value-chain development is scalable elsewhere in the Western Balkans and in each country of the Danube Region. However, the model must be adapted according to local needs and regional-specific aspects.

Further information

Link to where further information on the best practice can be found

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3.2.7. Promising chance of the Cup Plant - Agrar-innovationen Hahnennest GmbH

Title of the good practice
Promising chance of the Cup Plant - Agrar-innovationen Hahnennest GmbH

Location of the good practice
Ostrach-Hahnennest, Districtof Sigmaringen, Baden-Württemberg (BW), Germany

Start date of the good practice and (if applicable) end date
2010 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Agrar-innovationen Hahnennest GmbH was founded in January 2021, and it is dealing with a unique project in BW. This project is all about a special plant: the Cup Plant (Silphium perfoliatum). In 2010, four farmer families have joined forces there and jointly operate a biogas plant. The plant mainly uses the cup plant for fermentation to create an alternative to the frequently used corn. The cultivation of the cup plant has been optimized there for years, and is especially interesting since, besides energy yield, other benefits have been discovered. Since 2015, the plant has been sold under the brand name "Donau-Silphie"[15]. One of the advantages of this plant is that it has a positive effect on insect biodiversity as a flowering plant and can be used for carbon storage. Before being utilized for biogas, a special process (steam explosion) separates the plant fibres. This can then be used to produce silphium paper, an alternative to regular wood fibres. Other applications, like the production of insulating products, are also possible. The project aims to form closed cycles. The companies in Hahnennest represent an example of how many rural biogas plants could become so-called fibre factories. Preserving biodiversity; producing paper from plant fibres; producing biogas from the other parts of the plant; and naturally fertilizing the fields with the digestate.

[15] https://www.biooekonomie-bw.de/en/articles/news/Energy-park-Donau-Silphie-a-symbiosis-that-benefits-nature, last accessed 12/11/2021

The supply chain therefore already exists and results in less CO2 emissions than is sequestered by the biomass - making fibre production competitive and more cost-effective. Furthermore, gas, electricity and heat from the biogas plant can be marketed as energy from the region.

Figure 2. Energiepark Hahnennest (Picture: OutNature GmbH (www.out-nature.de))

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- SMEs and supply chain actors
- Local public authorities
- Research and education institutions
- Farmers and biogas producers
- Municipalities in the surrounding area

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

The companies in Hahnennest show, especially in times of COVID-19, the importance of farmers and rural areas to our society, for the energy transition and the supply of raw materials. Biomass conversion in rural areas is an aspect that is also highlighted in GoDanuBio. For example, job creation can counteract the demographic change. The creators of this best practice are the farmers themselves. Starting with these ideas, Hahnennest is more well known as an agricultural region.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The Cup Plant was a new plant for farmers. Meanwhile, 400 - 800 hectares Donau-Silphie are needed for a fibre plantation. The paradigm shift from a niche plant to a main agricultural crop was probably the biggest challenge within the project. The change from a normal crop rotation toward a perennial culture also needs to be considered. Generally, this goes together with a reduction in working hours, however, farmers must get familiar with this principle. Working in a team is one of the keys to success in this practice. Appreciation, respect, and reliability are the base of good teamwork. This needs to be maintained.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The project is easy to transfer to other regions, as e.g., biogas plants already exist in all regions. The Donau-Silphie has been cultivated by farmers since the beginning of the initiative and offers several advantages over conventional crops. For example, it livens up the landscape, provides a habitat for insects and other animal species and can also be cultivated in less favourable locations[16]. This represents an alternative to conventional energy crops. The fibres can be used for paper production, for example, which represents an additional application in the sense of bioeconomy.

Further information

Link to where further information on the best practice can be found

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https://www.agrarinnovationen-hahnennest.de/kontakt.html

[16] https://www.donau-silphie.de/Oekologie, last accessed 20/12/2021

3.2.8. AgroRings

Title of the good practice
AgroRings

Location of the good practice
Pribeník, Trebišov district (Košice region), Slovakia

Start date of the good practice and (if applicable) end date
June 2020 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The goal of growing vegetables in an environmentally and economically sustainable way has been around for more than 30 years. The owner of the AgroRing system of vegetable growing was Jan Šilinskýa professional vegetable grower in Slovakia. The aim was to grow vegetables in an ecologically and economically sustainable way. Jan Šilinský as the owner of the system brings his innovative idea to another small farm and expanded the ecological zone. The official patented owner of the technology is AgroRing Slovakia a farm located at HrubýŠtúr.
The AgroRing works by creating circular fields with a spiral-shaped row that machines an electrically driven swivel arm. This is a small "revolution" in vegetable growing. Unlike heavy machinery, the AgroRing does not damage the soil and healthy food from domestic production reaches the table. During the year, under suitable climatic conditions, it is possible to grow 52 types of vegetables, various types of herbs and/or flowers in the fields.
It's an ecologically and economically sustainable way of growing vegetables for young growers and small farms. The farm model is easily replicated and is based on the principle of supporting community agriculture. The system of this crop cultivation is beneficial for humans as well as for the soil. Elimination of soil compaction, reduction of energy consumption and introduction of partial or fully automated agro-technical operations.

The model already tested more than 15 different attachments, which are being constantly improved and refined based on the experience gained during cultivation. Other devices, can be attached to the agro-technical bridge - for example: grooving machine, seeder, tombstone, rotary cultivator, sprinkler etc.

5 Benefits of the AgroRing system:

- relieving the farmer of physical effort without the use of heavy mechanization
- stopping soil degradation and ensures its reclamation
- bringing innovation to traditional fields of study
- easily adaptable to other schools' system
- easily expandable to other schools throughout the Košice region

The production is suitable for a small farm where it is possible to ensure the production o fhealthy crops for the whole family. The model farm consists of four arms, which cultivate twelve circular fields. Stabilization areas to support the biodiversity are attached thus there is the possibility to grow various crops in a small area.

The AgroRing system is already set on a model school farm, which the Košice self-governing region launched at the allocated workplace of the Secondary Vocational School of Agro-technical and Gastronomic Services in Pribeník. The project applied at model school farm Pribeník is called AgroRings and was launched by Košice Self-governing region. Students can study how to produce vegetables ecologically and in organic quality directly in the fields. The project also aims to motivate young people to learn and work in the field of agriculture and food production.

The actual launch of the AgroRings project was preceded by several months of project preparation, the signing of a memorandum for participating partners and subsequent approval of its financing by members of the Košice Self-governing region city council.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- Secondary schools in the Košice region
- DreamFarm Slovakia - small family farm focused on vegetable growing to organic quality
- Hotel Academy Košice
- Grammar school KráľovskýChlmec
- Secondary school of agro-technical and gastronomic services Pribeník

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

The main idea of the project is to exploit the most fertile land without soil damage.
The main output is home delivery of boxes of fresh seasonal vegetables once a week (CSA - Community Support Agriculture, "subscription" of healthy food for 100 EUR per month) as well as a direct sale to restaurants and sale of boxes based on the order.

The model farm in Pribeník, collected through organic cultivation 7 tons of vegetables, which were served as student meals- 11 types of crops were grown.

AgroRings aims to create a stable natural vegetable supply system for a permanent circle of the interested community. In addition to food self-sufficiency, it is also one of the methods for the natural development of the Slovak countryside.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

This project represents the cultivation of vegetables of the highest organic quality.
In the next phase, one larger agro farm, (area of 200 hectares) would be set up for AgroRings project implementation, rented to small farmers. Košice Self-governing region will cooperate with the Project's agriculture department.
The given project is the first step towards sustainable development of the whole region and improvement in the conditions of small farms.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The main concept of AgroRings is easily adaptable mainly by small farmers the possibility to grow several types of crops in a small area. In addition, the whole concept was aligned with the agricultural education system.
Currently, the AgroRings system can be found in three locations in Slovakia, but the first official version of a functional prototype is in Pribeník.

Further information

Link to where further information on the best practice can be found

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Youtube: https://www.youtube.com/watch?v=uOuy3cKFkpo

Youtube: https://www.youtube.com/watch?v=kvMATRjN9ws

Facebook:https://www.facebook.com/pages/Agrokruh/467768089974765/

3.3. Raising awareness about circular bioeconomy processes

3.3.1. Competent academic and communication network on bioeconomy

Title of the good practice
Competent academic and communication network on bioeconomy

Location of the good practice
Baden-Württemberg

Start date of the good practice and (if applicable) end date
Ongoing

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

This is formulated in quite general terms, but this is precisely what makes it special. For a successful bioeconomy, all actors must pull together. Society also plays a crucial role here. Therefore, it is important that education in the field of bioeconomy is possible to directly train professionals. This includes not only plain bioeconomy education (e.g., the master's degree program "Bioeconomy"[17] at the University of Hohenheim), but also the bio-economisation of existing educational pathways (e.g., by offering modules in degree courses or teaching materials for students). Within the funding program "Network initiatives for the further development of the lead region Sustainable Bioeconomy BW"[18] concrete concepts, recommendations for action and training materials can be created for consultation, education, and training in the bioeconomy, or a selected topic area of the bioeconomy. Students and young professionals can get in touch with the industry via the promotion of innovation partnerships between universities and companies, including financial support[19]. BW also has a strong research sector in the field of bioeconomy. The research sector must not only be linked to industry, but also all other actors. Congresses and events can help to disseminate the results. An example is Bioeconomy Day, which is organized by the Ministry of Food, Rural Affairs and Consumer Protection.

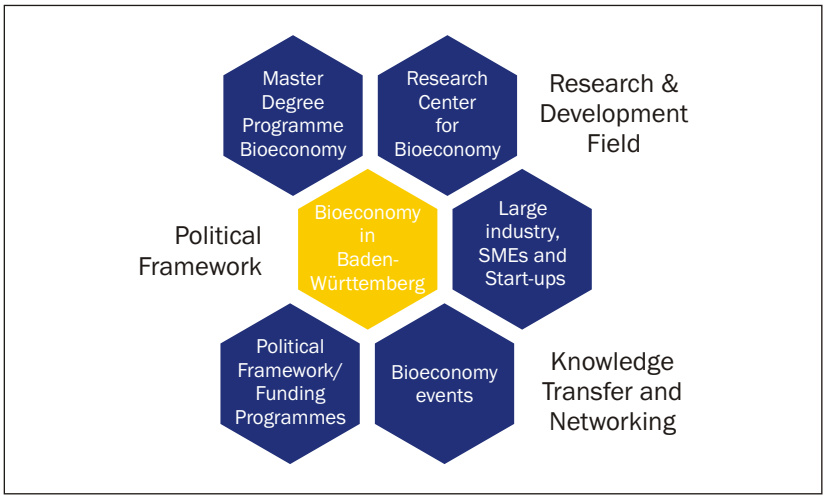
In 2020, there has been a Bioeconomy Congress organized by several Ministries from BW, the University of Hohenheim and BIOPRO Baden-Württemberg GmbH[20].

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- Students and society in general
- Enterprises (Large industry, SME, Start-ups)
- Public administration
- Business support organizations



[17] https://www.uni-hohenheim.de/en/bioeconomy-masters, last accessed 19/01/2022

[18] https://mlr.baden-wuerttemberg.de/de/unsere-themen/biooekonomie-und-innovation/foerderung-netzwerke/, last accessed 19/01/2022

[19] https://biooekonomie-bw.uni-hohenheim.de/en/biopartnerbw-project, last accessed 19/01/2022

[20] https://bioeconomy-congress.uni-hohenheim.de/startseite, last accessed 19/02/2022

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

The interlocking of research, science and communication has different advantages. Young people can thus be trained directly in the field of the bioeconomy. This makes them become young professionals who can go their way in research and industry. The connections through this are facilitated by programs like BioPartnerBW. This support for communication helps to leverage the results out of research and science. This contributes to young people becoming interested in the bioeconomy and the rest of society becoming familiar with its products. In the future, the acceptance of the bioeconomy should be increased, and the civil society should be "picked up" through successful science communication.

Many technologies are currently still in the scale-up phase; intensive research on the processes for implementation in the industry are necessary. Start-ups can play a bridging role here. Funding programs can also help to implement ideas and put them into practice.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

One lesson that was learned in BW already is that the bioeconomy is not a new industry. Rather, it draws on many different disciplines and must be considered in an interdisciplinary way. The interlocking of individual sectors is elementary. In the future, developments in this field should help people to look beyond sectoral boundaries and discover new possibilities. Society plays a decisive role in this process. This interlinking will probably be carried out further. One example of this is the Science Year 2020/21 at the national level in Germany, funded by the Federal Ministry of Education and Research. The idea behind it was to bring the idea of the bioeconomy to the public. There were various campaigns and projects in which current developments from research and science were brought to the attention of the public.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The system is based on the interlocking of individual sectors, so it should be easier to transfer. In the other regions, it must first be analysed which parts of the system are still missing and which are needed at all. Funding is crucial for their implementation, especially for research and development. Funding and expertise are also necessary for the integration of the bioeconomy into schools and universities. In general, bridges need to be built, such as innovation partnerships between universities and industry. However, it is also of particular interest to establish the connection between research and society, for which congresses or similar events can serve. Ultimately, research provides the basis for the development of adapted processes for bio-based processes - but this requires skilled workers who need to be properly trained.

Further information

Link to where further information on the best practice can be found

Contact:
Dr. Brigitte Kempter-Regel, BIOPRO Baden-Württemberg GmbH.
E-Mail: kempter@bio-pro.de;
Phone: +49 (0)711 21818545
Bioeconomy related research institutions in Baden-Württemberg (only in German): https://www.biooekonomie-bw.de/datenbank/forschung

[22] https://www.wissenschaftsjahr.de/2020-21/aktuelles/aktuelle-meldungen/dezember-2021/wissenschaftsjahr-2020/21-zum-thema-biooekonomie, last accessed 19/01/2021

3.3.2 Food for the Earth

Title of the good practice
Food for the Earth

Location of the good practice
Bulgaria (Sofia), Romania (Bucharest)

Start date of the good practice and (if applicable) end date
2013 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Food for the Earth was born in 2013 in Knyajevo, Sofia, Bulgaria, as an initiative for community composting . The Project “Food for the Earth - good for all” 2013 was entered in the European Commission's contest: “World you like Challenge” as a national winner and received a certificate for a top-ranked climate solution.
Consequently, in 2020, the initiative grows as a Romanian-Bulgarian group for the Earth Composting Communities for Climate. This group aims to raise awareness, inform, and form communities in urban and rural areas about composting, compost, and its benefits for them. In December 2020 “Food for the Earth - Composting Communities for Climate”Project was a winner in the contest of Climate Community Lab, launched by EIT Climate-KIC and partners in October 2020 to spark climate impact partnerships in the region.
The project is a cross-border collaboration between the “Urban Cultor” startup in Bucharest, Romania, and “Our Neighbourhood Association for Sustainable Practices “in Bulgaria. The short-term pilot project's idea was to make a demonstration composting area in Bucharest for cross-border multiplication and scale-up of the already started Sofia initiative .
Currently, there are two shared compost locations installed and operating in urban areas: one in Bulgaria, Sofia by “Our Neighbourhood Association for Sustainable Practices “ and the second in Bucharest by “Urban Cultor” company. The teams and volunteers working for the initiative, adapt and

transfer knowledge about soil- health in urban and peri-urban areas and raise awareness about composting and recycling green waste and scrap among citizens and municipalities.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

- Citizens from the neighborhood
- Volunteers
- Municipalities

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

By composting within the neighbourhood, the amount of waste for disposal can be reduced by 30 to 40%; in this way the community directly influences their own production of greenhouse gas, as transport and disposal of waste material will be reduced by the same percentage.
The locally based composting also:
- reduces costs with waste disposal in the community,
- promotes social inclusion and empowerment,
- greens neighbourhoods,
- builds healthy soils,
- supports local food production and food security,
- embeds a culture of composting know-how in the community
- and can sustain local jobs.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The main challenge in implementing the project was the lack of sufficient knowledge about ecology and environmentally friendly ways to live by the citizens in the neighbourhood.

People still do not entirely believe that local practices can positively benefit the environment in a global sense.
The teams from Food for the earth respond to this challenge by providing tools and events which aim to increase the ecological knowledge, awareness, and engagement of the local community and to inspire it towards anenvironmentally friendly lifestyle.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

Currently, there are two shared compost locations installed and operating in urban areas: one in Bulgaria, Sofia by “Our Neighbourhood Association for Sustainable Practices “and the second in Bucharest by “Urban Cultor” company. These community-based operations can move from concept to operation in a relatively short time, and usually are welcome in the neighbourhood where they are implemented. By involving the right stakeholders and motivating the communities, the practice can be adopted in any country within the Danube region and can function as a Danube network for neighbourhood composting.

Further information

Link to where further information on the best practice can be found

Food for the Earth, composting communities for Climate
Food for the Earth composting communities for Climate Bulgaria | Facebook
Food for the Earth composting communities for Climate Romania | Facebook
Our Neighborhood Association for Sustainable Practices
1, Divkesten, str., fl.3, 1619 Sofia, Bulgaria
E-mail: nashiatkvartal@gmail.com
Website: http://ourneighborhoodasp.blogspot.com/

3.3.3. “Networked wool”

Title of the good practice
Project “Networked wool”

Location of the good practice
Island of Cres, Croatia

Start date of the good practice and (if applicable) end date
2014 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Wool is a valuable and neglected raw material. On the island of Cres, about 10 tons of wool are sheared and thrown away every year, thus becoming an environmental problem. Therefore, the goal of the project "Networked wool" (http://ruta-cres.hr/) is education on the issue of discarding wool and processing methods, through creative workshops on the topic of wool recycling.

Wool processing and clothing production was a natural way of using wool on Cres. Later, this wool was bought and sent for processing in textile factories. However, in the last thirty years, the purchase of wool and lambskins has stopped because wool processing in Croatia has completely stopped due to economic unprofitability. Thus, shepherds, having no other avenues, leave wool in the wild after shearing sheep. Wool does not decompose naturally, nor does it burn, and it is becoming an aesthetic and growing environmental problem. In habitats covered by wool, nothing grows, and pasture areas are reduced. Disposal of wool and leather in a city landfill is not allowed because it attracts rodents.

There are about 15,000 sheep on the island of Cres, and approximately 1 kg of wool is obtained from each, which is left scattered on boulders, holes, bushes or along roads where it damages the landscape and pollutes the environment.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The direct beneficiaries of this project are local farmers who breed sheep, and children and young people who are educated by the Ruta Group through creative workshops on: the problem of discarding wool, its value, the technique of processing wool by felting, recycling old nets and introduces the traditional story of sheep and fishing.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

The main output of this best practice is raised awareness among children and young people on the problem of discarding wool, its value, the technique of processing wool by felting, recycling old nets and the traditional story of sheep and fishing.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

This best practice is important because it shows how important is to educate children if we want to achieve long-term results. It also emphasizes the importance of focusing on local environmental aspects that can lead to new business opportunities in rural areas.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of the Networked wool project can be transferred to any other rural region where the discarding of wool is an environmental issue.

Further information

Link to where further information on the best practice can be found

Website:

https://ruta-cres.hr/rutin-projekt-umrezena-vuna-prosao-na-natjecaju-ine/

3.3.4 INCIEN (Institute of Circular Economy)

Title of the good practice
INCIEN (Institute of Circular Economy)

Location of the good practice
Prague, Czech Republic

Start date of the good practice and (if applicable) end date
2015 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

INCIEN was established in 2015 to raise awareness on the circular economy concept and demonstrate it in practice. INCIEN promotes more efficient ways of managing raw materials in Czechia. Since 2015, it has contributed to the fact that the circular economy has become much more widely known in Czechia. INCIEN promotes this change both from above (in working groups of Ministries, etc.) and from below (through the media, social networks, blogs, or newsletters). Education, publicity and lobbying in favour of the circular economy can be effective and free of charge.
INCIEN operates as a think-tank whose activities are at the intersection of government, academia, and business. It provides information and data on current materials management in the country and proposes recommendations to the government, regions, cities, or other players. It supplies the necessary expertise, educates, prepares expert studies, and engages in research. Most of its activities are developed within the framework of long-term thematic programs, which it implements in cooperation with partners.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:

- SMEs, supply chain actors
- Local Public Authorities
- Regional Agencies and Institutes
- NGOs
- Experts and catalyst entities
- General public

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

INCIEN promotes the circular economy as a priority for Czechia.
It organizes lectures, workshops, and webinars to inspire and educate. It also develops education in the form of specialized courses for the public or professionals from best practice.
INCIEN seeks to clarify how materials are handled in Czechia to find a way to use them as efficiently as possible. It formulates recommendations for implementing changes and improvements.
INCIEN actively speaks about the topic at conferences and seminars, and shares everything new on social media.
INCIEN is part of a web of working groups at the level of Ministries, government, regions, and municipalities. It provides supervision for putting circular economy principles into practice.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The importance of knowledge transfer is essential to create visions and long-term business development strategies.
Current challenges such as the Green Deal, use of renewable energies, cascading approach in forest-based industries, circular economy principles etc. should be transferred into the business eco-systems.
The hardest part of this dissemination is to engage SMEs and stakeholders in innovation and new pathways, to become pioneers in the different business sectors.
A weak point is the fact that activities are financed on a project basis only. Therefore, public financial support should be provided for such business services.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model of INCIEN can be replicated in each country of the Danube Region. However, in doing so, the availability of highly-experienced human resources and support from local public authorities and the business sector are to be taken into consideration. The so-called “copy-paste” approach is not possible. It is therefore advisable to adapt the model according to local needs and regional specific aspects.

Further information

Link to where further information on the best practice can be found

Contact: Pavel Zedníček,
Email: Pavel@incien.org
Website: https://incien.org/

3.3.5. ÖKOLOG - Programme

Title of the good practice
ÖKOLOG - Programme

Location of the good practice
Alpen-Adria-Universität Klagenfurt, Sterneckstraße 15, 9010 Klagenfurt

Start date of the good practice and (if applicable) end date
1997 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

The ÖKOLOG program aims 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 introduced into the schools. Now 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.

Beneficiaries
Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are:
- Schools
- Pedagogical college

Output and Results
Why is this best practice considered good? What are its outputs, results and expected impacts?

The ÖKOLOG program aims to encourage and motivate schools to become active in the field of environmental education, to anchor these concerns in

the school program, and make them visible step by step, based on concrete topics such as saving energy; avoiding waste; creating ecological school grounds; healthy snacks etc. Environmental education addresses not only the natural but also the cultural, social, built environment, and technical aspects of the environment.

ÖKOLOG Schools have the following advantages:

- Up to 1.000 € financial support for projects
- Free information materials
- Support in Public Relations.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

The ÖKOLOG initiative shows, how schools can be supported to transfer knowledge to their pupils. Major milestones are depicted in this file: https://www.oekolog.at/dokumente/1/Chronologie_und_Zeittafel_von_OEKOLOG__.pdf. The long history of this initiative also stresses its importance and positive influence on schools and society.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The ÖKOLOG initiative can be implemented in other regions as well and would be a milestone in teaching pupils the importance of thinking in an ecological way. The earlier it is introduced the better the impact on society.

Further information

Link to where further information on the best practice can be found

Contact: Mag.a Petra Korenjak

E-Mail: oekolog@aau.at

Website: https://www.oekolog.at/

3.3.6. Hiša Mandrova: Youth-led entrepreneurship in a rural area

Title of the good practice
Hiša Mandrova: Youth-led entrepreneurship in a rural area

Location of the good practice
Novi Kot, Slovenia

Start date of the good practice and (if applicable) end date
2019 - present

Description of the good practice
What was the starting point, challenge and/or methodology? What has been done? What is the time frame of the best practice? What resources does it involve? How much does it cost? Who is doing it?

Hiša Mandrova is probably the most publicized example of youth-centred rural transformation in Slovenia. They established a project named after a former house name to which they moved after a successful career in Amsterdam. The Founders renovated a house that was built as a school in 1953 and used wood fibre insulation, locally sourced wood and a combination of lime and clay plastering. In this way they combine traditional knowledge of regenerative agriculture and woodworking. With their story they wish to inspire young people to start producing their food and to teach about local woodworking heritage. To promote traditional wood-making and traditional and sustainable food production the Founders established a website and use different social media platforms. They aim to attract visitors to apply for a sequence of workshops which becomes an income stream. The project was initially sponsored by the Ministry for Culture and EU Cohesion Fund through the Centre for Creativity. The Founder's unusual lifestyle has been presented in different magazines, TV and radio shows which is an inspiration to many young people from cities. However, they are not the only example of youth-led entrepreneurship in rural Slovenia. Many young couples or groups of young people have decided to migrate from cities to rural areas and set up their new life there. Hiška v Biljah (also known as Tiny House) is one such project

- promoting sustainable gardening that includes ideas of permaculture and biodynamics. They arranged their home so that it produces little garbage and a small amount of wastewater and consumes few other resources. Within a small firm they manage a website with all resources needed to begin as a sustainable gardener (books and multimedia content).
They also organize workshops in their garden.

Beneficiaries

Who are the beneficiaries? How many local/regional public authorities, sectoral agencies, higher education and research, interest groups including NGOs, SMEs, enterprises excluding SMEs, business support organizations etc. benefited from this best practice?

The beneficiary entities are all people (specially those under the age of 30) who wish to live and work in Slovenian rural areas.

Output and Results

Why is this best practice considered good? What are its outputs, results and expected impacts?

Hiša Mandrova is an inspiration to many young people who want to move out of expensive and polluted cities and are increasingly environmentally conscious. Due to the good media skills of the couple and their presence on social media platforms this project has been presented on TV and radio shows, in news articles and elsewhere. Hiša Mandrova organizes workshops and other activities, where it brings together all interested entities.

Lessons Learned

What did you learn from the implementation of this best practice? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think that this best practice will evolve in the future?

Hiša Mandrova gained popularity among journalists which helped to promote the project creating funding for the couple. But at the same time their story inspires young people from all over Slovenia and abroad to move into the picturesque rural hinterland and re-establish life there.

This best practice has a high potential to inspire young people to find abandoned houses in rural areas and achieve their entrepreneurship goals that would likely be unrealistic when living in cities.
The challenging part is that such a project needs some initial capital investment, so it requires basic savings from people who decide to become engaged.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The model is easily transferable to many rural regions around Europe. Many countries are facing rural out-migration and rural areas have a high potential to resettle.

Further information

Link to where further information on the best practice can be found

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Website: https://hisamandrova.com/

3.4. Support instruments for the bioeconomy

3.4.1. Green National Champions Program

Title of the good practice
Green National Champions Program

Location of the good practice
Hungary

Start date of the good practice and (if applicable) end date
2020 - present

Description of the good practice
What was the starting point/challenge?
Methodology. What has been done? What is the time frame of the activity? What resources did it involve? How much did it cost? Who implemented it? (Cluster Organization/managements, one Cluster Participant, external provider?) In case it is a service to Cluster Participants, what is the access policy?

The Green National Champions Programme aims to financially support the development of those Hungarian SMEs with high growth potential, operating in an environmental-conscious way and producing goods related to the green economy. The Green National Champions program sets its strategic goals according to a three-point goal system.

Economic and industrial development goals:

- Targeted and comprehensive development of the domestic green economy
- Facilitating the production of goods by Hungarian companies (import substitution)
- Strengthening the development capacity, innovation, and digital performance of SMEs

Social goals:

- Creation of a Green manufacturer and service catalogue
- Making sustainable and environmentally friendly products competitive
- Promoting clean technologies and industrial ecology

Environmental goals:

- Reducing emissions, increasing energy efficiency, and recycling & reuse (Industrial) waste and by-products
- Achieve the goals set out in the Climate and Nature Protection Action Plan Developments need to focus on technology change and/or Modernization and capacity building. Only companies with a so-called

pre-qualification certificate issued by IFKA - proving that they could contribute to the development of the Hungarian green economy - can apply for the dedicated financial source of the given calls.

Beneficiaries

Who are the beneficiaries? How many Cluster Participants benefited from this Activity?

The beneficiaries are micro-, small-, medium-sized enterprises

Output and Results

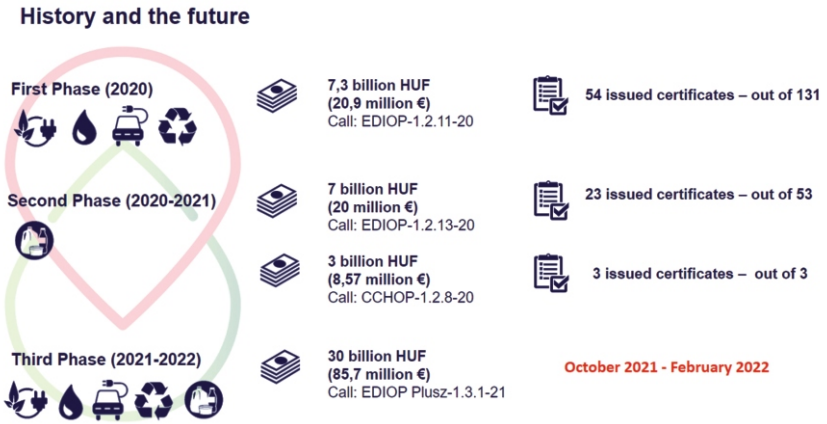
What is the added value of this activity? What are its outputs, results and expected impacts?

The first phase was handled during the second half of 2020. Manufacturing SMEs were able to apply for 4 topics:

- producing an energy efficiency product, e.g., solar panel system, boiler system (including bio-mass boilers), heat pumps and heat recovery systems, building boundary structures, door and window structures, lighting systems, and shading structures
- producing a product related to water efficiency, e.g.,water-saving tools and technologies, water retention, and/or recycling equipment.
- producing a product related to electro-mobility.
- producing a product from secondary raw materials

The second phase focused on the SMEs which are affected by the SUP directive (Single Use Plastics Directive) or those manufacturing substitute products instead of single-use plastic.

The third phase is in progress and contains all topics (a mix of 1st and 2nd phases). Summary of the phases and the budget of the given calls:



Lessons Learned

What did you learn from the implementation of this activity? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think you might evolve that activity in the future?

The programme is popular among SMEs, there is a demand for it, enabling the building on the experiences; and the development of a complex, multi-level programme. The programme is a good practice on how to translate theoretical, strategic goals into practical implementation.
The secondary raw material usage was the most popular among the topics which demonstrate that there is a great need to strengthen industrial symbiosis relationships. Among participants there are also some SMEs processing bio-based waste to produce secondary raw materials or valuable by-products. It fosters the spread of circular bioeconomy business models.

Transferability to the biobased industry

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

To start a similar Green National Champions Program in another country a strong commitment is needed from the country's government. Namely, after the pre-qualification by IFKA, the eligible company can only apply for the indicated call if it has the certificate. The certificate justifies that the company and its development and product meet the expected green requirements. The pre-qualification registration must define the green requirements and scoring system, which is clear for everyone, and must be approved by the managing authority.

Further information

Link to where further information on the best practice can be found

Contact: EnikőGaál-Csoma (IFKA), professional leader of the program,

Email: csoma@ifka.hu

Website: https://znb.ifka.hu/

3.4.2. C-VoUCHER Scheme in Noth West Region of Romania

Title of the good practice
C-VoUCHER Scheme in Noth West Region of Romania

Location of the good practice
North West region of Romania and Denmark, France, Poland, Spain, Sweden

Start date of the good practice and (if applicable) end date
April 2018- June 2021

Description of the good practice
What was the starting point/challenge?
Methodology. What has been done? What is the time frame of the activity? What resources did it involve? How much did it cost? Who implemented it? (Cluster Organization/managements, one Cluster Participant, external provider?) In case it is a service to Cluster Participants, what is the access policy?

The C-VoUCHER project aimed at generating new cross-sectoral and cross-border value chains with a circular economy approach, by combining industrial value chains (agro-food, health, sea industries, textile & manufacturing) with enabling technologies (digital, hybrid & engineering), through design-orientated concepts.
C-VoUCHER project was financed by Horizon 2020 - INNOSUP-1 Cluster facilitated projects for new industrial value chains. Project budget: €4.2 million to support 66 European SMEs in the circular transformation.
The C-VoUCHER consortium was led by FundingBox Accelerator and was composed of 13 partners from 6 European countries (Denmark, Romania, France, Poland, Spain, and Sweden). Behind them, the project is also supported by 41 clusters linked to the partner organizations.
C-VoUCHER project had 4 phases:
Phase 1: Circularity open space.
Phase 2: Circularity program: Open Call for SMEs (2 rounds: 2018 and 2019); Circularity Program: designer-in-residence assistance to individual SMEs (definition of business needs, implementation of solutions, business mentoring.)

Phase 3: Circularity Value Chain Replication Program: Open Calls for Adopter SMEs (2 rounds: 2019 and 2020); Value Chain Replication Program - massive circular value chain generation.
Phase 4: Sustainability: Circular Design Toolkit for Regions; Adoption of C-Voucher model by European regions.
Romanian Development Agency of North-West was a partner of the C-Voucher project responsible for the design and management of the innovation vouchers, Open Calls and the coordination and support of the assigned beneficiary SMEs included in the Circularity Program and Circularity Value Replication Programs.
From the North-West Development Region, 4 clusters collaborated on the project: Cluster AgroTransilvania, Cluster Mobilier Transilvan, Cluster Holzbox, Cluster CLEMS.

Beneficiaries

Who are the beneficiaries? How many Cluster Participants benefited from this Activity?

Beneficiaries are SMEs:
Circularity Program: 24 selected SMEs were included in the Circularity Program - out of each 12 SMEs received innovation vouchers of max 60,000 euros and coaching services for 9 months on the business design and circular economy component, to develop the proposed innovative solutions; Circularity Value Replication Program: 42 SMEs received innovation vouchers of max 15,000 euros and dedicated coaching services for 3 months during the autumn 2019 and autumn 2020 period.

Output and Results

What is the added value of this activity? What are its outputs, results and expected impacts?

Circularity Program:
Two Romanian SMEs from 24 SMEs were selected to take part in a previous Prototype-athon:
- SC Katty Fashion SRL (textile) and SC Fibrex Co SRL (re-using waste from composite materials).
- SC Fibrex CO SRL was one of the 6 innovative SMEs that joined the second round of the Circularity Programme (9 months).

Circularity Value Replication Programme:
The Romanian SMEs selected and invited to the Circularity Value Replication Programme were - SC TAILOR STUDIO SRL (made-to-measure clothing design) and Transylvania Brew SRL (cider apple pomace and apple process waste reduction).

Lessons Learned

What did you learn from the implementation of this activity? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think you might evolve that activity in the future?

SC Katty Fashion SRL replaced standard prototypes with 3D models to ensure that no materials are wasted. By implementing this 3D model system this company is not only able to save money and make a positive impact, but it is also able to create value through innovation and sustainability.
SC Fibrex CO SRL - thanks to the C-Voucher project they will be able to implement similar solutions in the future. Fibrex is already beginning to work on ways in which they can reintegrate other waste (plastic materials) into their production cycle.

Transferability to other regions

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

Circular Design Toolkit for Regions: a first assessment screening on how ready a company is for the transition to the Circular Economy.
Adoption of the C-Voucher model by European regions.
Public-private partnership in regional circular bio economy.

Further information

Link to where further information on the best practice can be found

https://c-voucher.com/
https://c-voucher.com/winners-1st-open-call-adopters/
https://c-voucher.com/smes-to-onboard-second-round-of-the-circularity-programme/
https://c-voucher.com/circularity-marketplace/online-tools/

3.4.3. Innovative Young Farmer

Title of the good practice
Innovative Young Farmer

Location of the good practice
Slovenia

Start date of the good practice and (if applicable) end date
2009 - present

Description of the good practice
What was the starting point/challenge?
Methodology. What has been done? What is the time frame of the activity? What resources did it involve? How much did it cost? Who implemented it? (Cluster Organization/managements, one Cluster Participant, external provider?) In case it is a service to Cluster Participants, what is the access policy?

Each year the Chamber of Agriculture and Forestry of Slovenia and the Association of Slovenian Rural Youth organize the selection of Innovative Young Farmer. Candidates must live and work on a farm and be under 40 years of age. The goal of selection is to promote and disseminate innovative ideas, which make an important contribution to the preservation and development of agriculture, forestry, and fisheries. Also, at least one indicator must be accommodated.

Indicators are:

- The idea brings innovations important for further development.
- The idea brings original approaches to work.
- That the changes introduced are reflected in positive economic effects on the farm.

The title is awarded to the candidate who receives the highest number of points by the expert commission and online voting. Candidates and their ideas are promoted on different channels (TV shows, YouTube, social media, etc.).

Beneficiaries

Who are the beneficiaries? How many Cluster Participants benefited from this Activity?

The beneficiary entities are people under the age of 40 who live and work on a farm. Candidates from all over Slovenia can apply to participate, so the good practice has positive effects throughout the country.

Output and Results

What is the added value of this activity? What are its outputs, results and expected impacts?

This practice can be considered exemplary because it encourages young people to stay in rural areas and engage in agricultural, forestry, or fisheries activities, and at the same time be innovative. Simultaneously, candidates are already promoting themselves and their innovative products/ideas with their candidacy, as the actual selection promotes them through various channels (television, social networks, etc.), while the winner also receives a cash prize from different sponsors. The number of sponsors are an indication that the competition is also supported by different institutions and companies in Slovenia.

Lessons Learned

What did you learn from the implementation of this activity? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think you might evolve that activity in the future?

Although young farmers may already be innovative, selection further encourages them to develop innovative ideas, while also ensuring their recognition.

More and more young people are realizing the importance of engaging in agriculture, forestry, and fishing, but there are still too few of them. Therefore, the hardest part is to convince youth to move back to rural areas and to work in the primary sector.

The good practice can snow-ball - which would encourage more young farmers to develop their innovative ideas on their farms.

In the future selections will be even more recognized, and encourage more candidates to apply each year.

Transferability to other regions

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The good practice could also be implemented in other regions outside Slovenia, where the selected area would cover the whole of a small country, while the area of larger countries could be divided into regions.
There is also a possibility that there would be separate selections for agriculture, forestry, and fishing and not just together as in Slovenia.
If the selections took place every year in several EU Member states, a common platform could be created to present the candidates and then the winners. Everyone, regardless of which country they come from, could present, promote, and access good practices, innovative ideas, and products. The current selection in Slovenia could be further improved in the field of promoting innovative ideas and products. The promotion and selection is already occurring, but this could be further improved. The first step would be to create a special website for selection, the contents of which would be available in several languages.

Further information

Link to where further information on the best practice can be found

- Association of Slovenian rural Youth: https://zspm.si/
- Chamber of Agriculture and Forestry of Slovenia: https://www.kgzs.si/

3.4.4. Bio-refineries in the bioeconomy of the future

Title of the good practice
Bio-refineries in the bioeconomy of the future

Location of the good practice
WoodKPlus, AltenbergerStraße 69, 4040 Linz, Austria

Start date of the good practice and (if applicable) end date
February 2019 - March 2022

Description of the good practice
What was the starting point/challenge?
Methodology. What has been done? What is the time frame of the activity? What resources did it involve? How much did it cost? Who implemented it? (Cluster Organization/managements, one Cluster Participant, external provider?) In case it is a service to Cluster Participants, what is the access policy?

In the project, IEA Bio-energy Task 42 "Bio-refineries in the Bioeconomy of the Future" Wood K plus TBW research GesmbH and the Energy Institute at the Johannes Kepler University Linz together coordinate the networking of bio-refinery actors.

The program “Research Cooperation of the International Energy Agency with Wood K plus” was initiated by the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation, and Technology to fund Austrian research contributions to the projects of the International Energy Agency (IEA).

One of these projects, the IEA Bioenergy Task 42 "Bio-refineries in the Bioeconomy of the Future" pursues the strategic goal of advancing the establishment of bio-refineries. Bio-refineries process biomass to produce a range of marketable bio-based products and energy. This combined production of products and energy from biomass represents a sustainable system solution that does not rely on fossil feed-stocks and supports the circular economy. Therefore, the operation of bio-refineries can significantly reduce the emission of climate-relevant emissions and make an active contribution to sustainable development.

At the national level, the IEA Bio-energy Task 42 has been coordinated since 2016 by TBW Research GesmbH, the Energy Institute at Johannes Kepler University Linz, and Wood K plus. The networking of Austrian actors in the field of bio-refineries and the exchange of information at a national and international level are key objectives of the national force.

Beneficiaries

Who are the beneficiaries? How many Cluster Participants benefited from this Activity?

The beneficiary entities are:

- Bio-refineries
- Network Organizations

Output and Results

What is the added value of this activity? What are its outputs, results and expected impacts?

The Austrian consortium has already made significant contributions to the project. An open-access tool for the assessment of bio-refineries was developed, which systematically supports a TEE analysis (Technical/Economic/Environmental Assessment) of bio-refinery processes. The results of the analysis of bio-refinery processes in the form of case studies were summarized in so-called "Bio-refinery Factsheets". For selected product segments, such as bio-based fibres & materials and bio-based chemicals and lignine, specific market and technology reports were prepared. The reports present the potential of these products for the establishment of bio-refineries and summarize important information on the market environment. The respective national status of the participating countries in the field of bio-refineries is regularly summarized and published in Bio-refinery Country Reports.

In the 2019-2022 work period, the following countries are participating in IEA Bio-energy Task 42 to further advance the topic of "Establishing Bio-refineries" through international networking: Australia, Denmark, Germany, Ireland, Italy, Netherlands, Sweden, and Austria.

Lessons Learned

What did you learn from the implementation of this activity? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think you might evolve that activity in the future?

The project is not finished.

Transferability to other regions

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

The concept can be easily transferred to other regions, where bio-refineries are present and willing to cooperate.

Further information

Link to where further information on the best practice can be found

Contact: DI Michael Mandl, tbw research GesmbH

E-Mail: m.mandl@tbwresearch.org

Website: https://wood-kplus.at/en/partner/funding-projects/task-42ff

3.4.5. The Greening Self-Assessment Tool for SME

Title of the good practice
The Greening Self-Assessment Tool for SME

Location of the good practice
Chișinău, Republic of Moldova

Start date of the good practice and (if applicable) end date
2020 - present

Description of the good practice
What was the starting point/challenge?
Methodology. What has been done? What is the time frame of the activity? What resources did it involve? How much did it cost? Who implemented it? (Cluster Organization/managements, one Cluster Participant, external provider?) In case it is a service to Cluster Participants, what is the access policy?

In the frame of the National SMEs Greening Program, implemented by ODIMM - the Organisation for the Development of the SME Sector in the Republic of Moldova - a set of tools was developed with the purpose to promote, support and develop entrepreneurial capacities of SMEs, adopting production processes and services to implement greening practices. To this end, in June 2020 the Greening Self-Assessment Tool for SMEs. was developed and launched. The tool was developed by ODIMM at a cost of 5 000 € covered by OECD in close consultation with Clean Technology Centre from Ireland which provided recommendations and shared their experience of a similar tool-kit.

The Greening Self-Assessment Tool-kit provides the scoring system for interested SMEs on 4 greening topics for the enterprise:-

- Water management.
- Waste management.
- Energy efficiency.
- Greening management systems.

The purpose of the questionnaire is to conduct an overall analysis of the level of resource efficiency in the company. This tool gives a quick and useful analysis on what the company should do to grow its business more efficiently and optimize production costs.

Beneficiaries

Who are the beneficiaries? How many Cluster Participants benefited from this Activity?

Taking into consideration that the tool was developed in the frame of the SMEs Greening Program, beneficiaries are only small and medium enterprises who are involved and interested in carrying out greening measures for their business.

Output and Results

What is the added value of this activity? What are its outputs, results and expected impacts?

The process of application for the Greening SMEs Programm begins with the mandatory Greening Self-Assessment Tool. It takes a maximum of 15 minutes for the company to complete the questionnaire, as it consists of multiple-choice questions. The enterprises are encouraged to choose the most relevant answer close to their business activity. This allows the project to provide the enterprise with relevant recommendations at the time. Each question comes with a brief explanation, which helps to select the right answer.

Following the completion of the questionnaire, an Evaluation Score on the Efficiency of Resources Used in Business (ER Score) is sent by email, and a report with the recommendations of experts in the field of greening and environmental protection.
Now 491 SMEs have passed the Greening Self-Assessment Tool. These are the enterprises that were most interested in the Greening Program.
According to actual score, the enterprise obtains its overall situation on the degree of the greening of the business. Therefore, the enterprise then develops a greening project according to its strengths and weaknesses.

Lessons Learned

What did you learn from the implementation of this activity? What was the hardest part of doing it? What would you do differently? How do you think you could improve it? How do you think you might evolve that activity in the future?

The importance of the instrument is very significant because according to the score obtained the worst aspects in terms of pollution can be determined for the company. Also, because of the greening reports received companies are identified that need to green in one or more areas. In this context, the collection of scores shows collective weaknesses thus becomes a priority to implement greening actions in the frame of the Greening SMEs Program.
Thanks to this tool, environmental targetting will evolve in the future, on which greening measures will be taken, which will naturally lead to the reduction of CO2 emissions, waste recycling, efficient management of water resources, and the implementation of energy efficiency measures.

Transferability to other regions

What are the main points that can be transferred to other regions? What should be changed/added to make the best practice relevant?

This tool can easily be transferred or used in other regions where similar programs have been implemented focussing on good business greening practices, and activities that will reduce the impact of businesses on the environment; improve environmental indicators; and protect the environment.

The significant aspect is to promote the importance of greening measures in the agenda of the economic, institutional entities, interest groups including NGOs, sectoral agencies that will contribute to the rationale and exploitation of the Greening Self-Assessment Tool.

Further information

Link to where further information on the best practice can be found

Contact: Igor AFTENIUC, Senior specialist, Green Economy, and Sustainable Development Division, ODIMM
Website: https://odimm.md/ro/ecoimm

4. About the GoDanuBio project

Project summary

Danube regions and cities face major societal transitions regarding the demographic change. The rural exodus is caused by better employment opportunities for the youth and the prospect of a better life in cities. The movement of labour leads to depopulated areas leaving ageing and increasingly unskilled populations behind. However, regions can make a significant new beginning. However a multi-level participative governance approach and new institutional capacities are needed to pool existent excellent competencies and development potentials. Co-creating future strategies to increase the attractiveness of rural areas is the key to giving the young people new incentives to revive rural areas. Circular Bioeconomy is used as a tool, that promises to foster regional development: it is a concept focusing on the transition of a fossil-resource-based economy towards an economy making use of sustainable production of biological resources and processes to develop new products, thus setting rural areas and their development into focus. The concept catalyses interdisciplinary cooperation also between different policy areas/levels to actively address demographic change, and by enhancing value creation through new collaboration, business models, and value chains - raising the attractiveness to stay and even move to rural areas. Long term goal of the project is to enhance the socio-economic status of the regions, contribute to environmental, climate, and resource protection as well as foster the development of rural areas. An ecosystem for systematic multi-level governance with actors from the interested public, academia, industry, and political decision-making will be developed. That ecosystem gives space for co-creation and new forms of integrated urban-rural cooperation leading to increased institutional capacity to tackle demographic change. Thus, overcoming the persistent lack of engagement of societal actors in the political system by giving them ownership to address demographic change.
https://www.interreg-danube.eu/approved-projects/godanubio

Main features

- 18 ERDF PPs, 1 IPA Partner and 7 Associated Strategic Partners (ASPs)
- 10 countries represented; over 10 regions represented
- Over 72% of partners are Clusters / Cluster associations / Business support organizations

- Local authorities are strongly represented, also via AP
- Budget: €2.7 M; Duration: 30 months
- Alignment to the EUSDR: contribution to Priority Areas - PA 8 (Competitiveness of Enterprises) and PA 10 (Institutional Capacity & Cooperation)

Main objective

To tackle demographic change through developing and implementing participative multi-level governance schemes. For this purpose, the circular bioeconomy will be used as a catalyst for change. The specific focus is on rural-urban interaction and the young population, at local, regional, and cross-regional level.

Specific objectives

- Supporting the development of participative governance ecosystems.
- Setting up a mutual learning and transnational platform with the strategic goal of a cross-regional joint governance.
- Providing capacity building and training to unleash transnational multilevel governance and pave the way for a rural economic renaissance.

The importance of the GoDanuBio project for the Danube Region

- Opportunity to catalyse on the efforts of the DanuBioValNet project and put into practice the outputs, especially some of the recommendations as described in the Joint Strategy for Bio-Based Industry Cluster Policy (DanuBioValNet).
- Continuation of the started process of the bioeconomy concept implementation by the policymakers, which still is the major challenge in most of the GoDanuBio represented countries, via building the ecosystem for systematic multi-level participative governance cooperation.
- Opportunity to apply the distributed bioeconomy excellent environments approach focusing on interconnecting a local manufacturing network with a regional producer network of renewable materials contributing to the rural areas' recovery.

The strengths of the GoDanuBio project

- The commitment of the Lead Partner and partners, a great combination of proven and knowledgeable regional and national institutions, clusters, and policymakers.
- Important and relevant associated partners - local and regional municipalities and communities - the co-creators and recipients of the project results.
- Unique methods to be applied for achieving the desired results mentioned above.
- Sophisticated social innovation process with major benefits both for economy, society, and environment.

Expectations from the GoDanuBio implementation

- To boost the use of the topic bioeconomy in the national/regional/local policy actions resulting in bioeconomy strategy preparation and adoption.
- To identify the pilot local actors and prove the benefits of the bio economic approach in concrete cases further to demonstrate the economic and societal values of the bio-based ecosystems.
- To reveal the rural-urban, cross-regional, and transnational opportunities for co-operation to put the circular bioeconomy in Practice throughout the Danube Region

Project partners

BIOPRO Baden-Württemberg GmbH (BIOPRO), Baden-Württemberg

BIOPRO comes under the auspices of the Baden-Württemberg government and is specifically focused on the following themes: bioeconomy, biotechnology, pharmaceutical industry, and medical technology (healthcare industry). www.bio-pro.de/en/ (Lead partner)

ClusterAgentur Baden-Württemberg, hosted by VDI/VDE IT (CABW), Baden-Württemberg

CABW is a service provider for the cluster initiatives, regional networks, and cluster policy in Baden-Wuerttemberg. As partner of the cluster managements and cluster initiatives, the agency provides them with assistance on their way to further professionalization. http://vdivde-it.de (ERDF PP1)

Poly4EmI/Anteja ECG d.o.o. (Poly4EmI), Slovenia
Poly4EmI promotes the transition to bioeconomy through cross-fertilization of sectors and digitalization of value chains by ensuring that results of bio-related projects e.g., new policy tools, analysis, cases studies, projects ideas, services, S3, are further developed and result in new cross-regional value chains. http://www.anteja-ecg.com (ERDF PP2)

Romanian Cluster Association (CLUSTERO), Romania
CLUSTERO is the representative body of Romanian clusters and the main platform of cooperation, exchange of information and support towards the development of the national cluster landscape based on innovation and internationalisation. www.clustero.eu (ERDF PP3)

IFKA Public Benefit Non-profit Limited Company for the Development of the Industry (IFKA), Hungary.
IFKA has been playing an active role in the economic, technical, and innovation life of Hungary since 1990, bringing together the fields of logistics, quality assurance and environmental protection. One of the main objectives is to develop and promote sustainable material and resource management practices, business models to accelerate the transition to a circular economy, to exploit the economic opportunities and to foster the mindset change in this respect. https://ifka.hu/en (ERDF PP4)

Bulgarian Employers' Association Innovative Technologies (BRAIT), Bulgaria
BRAIT is a successor of the Association of Business Clusters, established 2009. The organization has the ambition to harmonize cluster policies and work to improve the economic development of its members in partnership with the government and state institutions. https://brait.bg/ (ERDF PP5)

Ministry of Education, Science and Sport (MIZS), Slovenia
MIZS is responsible for regulating all levels of Education, Science and Sport, and defines the adoptation of political documents in the field of Research and Innovation. MIZS has also become an active supporter of bioeconomy in Europe. https://www.gov.si/en/ (ERDF PP6)

Bioeconomy Cluster (BEC), Slovakia
BEC is the first organisation in Slovakia that connects policy makers, researchers, and business enterprises in bioeconomy sectors within strong agricultural region to affect the whole country. BEC connects the entities of knowledge triangle, promotes knowledge transfer and cooperation of R&D with agri-business. https://bioeconomy.sk/en (ERDF PP7)

The Ministry of Economy (ME), Romania
The Ministry of Economy is an institution of the Romanian Government, in charge for the elaboration and implementation of the National Strategy for Competitiveness. ME is a coordinator of cluster policy and national coordinator of PA8-EUSDR. www.economie.gov.ro (ERDF PP8)

National Cluster Association (NCA), Czech Republic
NCA brings together cluster organisations and cluster supporting bodies with the purpose to coordinate the sustainable development of cluster policy in the Czech Republic. NCA focuses on the role of clusters in innovations and new strategies, such as bioeconomy. www.nca.cz (ERDF PP9)

Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA), Bulgaria
BSMEPA plays a key role in the implementation of the government policies aimed at developing the competitiveness of the Bulgarian SMEs. In this respect BSMEPA provides to SMEs information and consulting services, organizes training courses and implements promotion activities in supporting the increase of SMEs' competitiveness and strengthening their international positions. (ERDF PP10)

Croatian Wood Cluster (CWC), Republic of Croatia
CWC creates a long-term business model for strengthening competitiveness of wood processing sector by encouraging the activities in the field of research, development of technology, applying and commercialisation of innovation and encouraging of investments. https://www.drvniklaster.hr/ (ERDF PP11)

Ministry of Economy, Entrepreneurship and Crafts of the Republic of Croatia (MEEC)

MEEC is a public authority dealing with legislation and policy measures on industry, SMEs, entrepreneurship, craftsmanship, innovation, and industrial competitiveness. Since 2011 MEEC coordinates Priority Area 8 of EU Strategy for Danube Region. www.mingo.hr (ERDF PP12)

Ghelința Commune, Romania

Ghelința Commune is a rural municipality located in Covasna County, Romania. The municipality has over 5000 inhabitants, a well-developed forest-based industry, and significant achievements in bio-energy developments. Almost all the public institutions are supplied by bio-energy-based space heating. New green start-ups started valorising biomass secondary products based on the circular economy principles. (https://www.gelence.info)(ERDF PP13)

Business Upper Austria - OÖ Wirtschaftsagentur GmbH (Biz-up), Upper Austria

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:
- 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. www.biz-up.at (ERDF PP14)

Styrian Technology Park (STP), Slovenia

STP is focused on the provision of comprehensive support for SMEs in Podravje region, Slovenia, in different stages of their lifecycle from the "setting up the business" stage, to the stages of growth, development, internationalization, restructuring activities, etc. www.stp.si (ERDF PP15)

Kosice Self-governing region (KSR), Slovakia

KSR offers opportunities to invest in traditional industry sectors such as metallurgy, machine and electric engineering alongside the fast developing and dynamic ICT sector, creative industry, and biomedicine. www.vucke.sk (ERDF PP17)

International Solar Energy Research Centre Konstanz e.V. (ISC), Baden-Württemberg

ISC is as a registered non-profit association, which develops crystalline silicon solar cells, modules, and overall energy systems. ISC is primarily financed by public research contracts, mainly from the EU and the German Federal Ministry of Economics and Energy, as well as by industrial contracts, IP licensing, and technology transfers.
https://isc-konstanz.de/en/ (ERDF PP18)

Regional Agency for the Development of Small and Medium Size Enterprises Alma Mons Ltd, Republic of Serbia (ALMA MONS)

ALMA MONS has expertise in the designing and development of territorial strategies and action plans with the specific focus on a participative approach, capacities to set priorities, monitoring and evaluation systems and implementation structure. ALMA MONS has a two-decade long experience in establishing and promoting work of the business networks - association, being promoter of clustering process in AP Vojvodina. A current initiative is focused on the creation of regional bioeconomy cluster, based on the value-chain model. www.almamons.rs (IPA PP1)

Provincial Secretariat for Regional Development, Interregional Cooperation and Local Self-Government, (PSRDIRCLSG), Republic of Serbia

PSRDIRCLSG is a department of the Provincial Government of Vojvodina, which oversees regional development, interregional cooperation, and local self-government. Regional development is a core competence of the Secretariat, and it includes managing and securing balanced regional development, implementing measures and activities, and establishing organization in the domain of balanced regional development, as well as endorsing strategic documents relating to regional development. http://region.vojvodina.gov.rs/nadleznost/?lang=en (AP)

Healthy Cities of the Czech Republic (HCCZ), Czech Republic

HCCZ is a professional association of 135 cities, municipalities, and regions. HCCZ is a long-term important actor in sustainable development

support through its expertise, such as the Sustainable Cities Evaluation Methodology and cooperation with tens of experts in individual disciplines of sustainable development. https://www.zdravamesta.cz/(AP).

Association of Towns and Communities of Slovakia, ZMOS, Slovakia
ZMOS is the association covering the whole territory of Slovakia engaged with 95% of all Slovak communities including large cities. It is one of the most important partners for the Slovak Government in proposing and commenting legislative tasks. (AP)

EUREGIO Bayerischer Wald - Böhmerwald / Regionalmanagement Mühviertel (EUREGIO), Austria
The EUREGIO was founded in 1994 as a trilateral municipal association in the border area of Bavaria, Bohemia and Austria. The main goals are the promotion of municipal cooperation across national borders and the regional anchoring of the European idea. https://euregio.at/ (AP)

The Association of Communes of Romania (ACOR), Romania
ACOR is an association of local authorities, having as members communes of Romania. ACOR pursues the unitary representation of the interests of the members, both in relation to the central institutions, as well as to those at European and international level. www.acor.ro (AP)

ICLEI - Local Governments for Sustainability, European Secretariat, (ICLEI) Baden-Württemberg
ICLEI is a global network of more than 1,750 local and regional governments committed to sustainable urban development. Active in 125 countries, ICLEI influence sustainability policy and drives local action for low emission, nature-based, equitable, resilient, and circular development. https://iclei.org/en (AP)

https://www.interreg-danube.eu/godanubio