

D.T1.1.1

Capitalization of Existing Results

Slovakia

BEC, KSR
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1. Short description of the region and its economic situation in general

Slovakia is a small and very open economy. Its size is comparable to the size of individual regions in large EU countries. Slovakia has been among the most rapidly growing economies in the EU in recent years. At the end of 2019, the GDP indicator reached € 92.3 mild, which represents a 3.6% increase compared to 2018. Small and medium size enterprises (SMEs) have a significant role in the Slovak economy, since they form 99% of all business entities in the country and employ approximately 75% of working population.

Slovakia is a country of massive exports. High rate of export performance and openness of Slovak economy is the result of its participation in global value chains. The largest share of exports goes through the chains, in which Slovakia is participating with Germany. Participation in value chains with countries outside the Eurozone (the Czech Republic, Poland, Hungary and the United Kingdom) as well as with non-European countries (China, USA, Korea) is also significant.

Industrial production is a dominant sector in Slovak economy. However, its position and competitive ability is strongly dependent on the demand of foreign markets and on exports. In this regard, it is important that Slovakia maintains positive balance of foreign trade. Considering the share of industrial sectors on GDP and employment, the manufacturing sectors clearly dominate.

Nowadays, the main industrial sectors with potential of growth are automotive industry, electronics, mechanical engineering, chemical engineering, ICT. The automotive sector is among the fastest growing sectors in Slovakia due to the recent large investments of numerous car producers. In addition to industrial sectors, Slovakia has historically long tradition in agriculture. One of the biggest advantages of Slovakia is that 1/3 of the soil is fertile black soil. Nowadays, agriculture is still an important sector of the national economy, but its role is changing. In the past, this sector accounted for a substantial part of Slovakia's GDP and employment. With current economic developments, the share of agriculture in production and employment is decreasing, but the social importance of this sector remains high. Agriculture is a key sector of rural development and it is one of the few job providers in rural areas.

The Slovak population is aging and represents a challenge not only for the pension system and health care in the country, but also for the labour market. Negative demographic development is a problem not only for the country and its economy, but also for employers. Furthermore, negative demographic trends, brain drain and Slovaks working abroad at positions below their qualifications gradually contributed to labour supply shortages.

2. Objectives and identification

The main objective of this deliverable is to gain good knowledge and, when possible, to capitalize results from a selected list of EU-funded projects and macroregional documents that are related with demographic change, circular bioeconomy and/or sustainable rural development.

The first research batch, focused on Horizon 2020 projects, was delivered by MIZS; BIOPRO made a first selection from this batch and extended the search in October 2020 with a focus on Interreg projects (Danube Transnational Programme, Alpine Space and Interreg Europe, including ARPAF) using the keep.eu database. Further research related to Horizon 2020 projects was done through [CORDIS](https://cordis.europa.eu/) and the

database of the Bio-Based Industries/BBi JU funded [LIFT project](#) that encompasses the results of up to 34 coordination and support actions funded mainly by Horizon 2020.

As search criteria, projects starting from 2016 onwards were considered and it was intended that most of the selected projects had at least one of the countries participating in GoDanuBio in their consortia. From each relevant project, its deliverables and outputs that could be interesting for the development of GoDanuBio were identified using the project websites. In some particular cases, the deliverables were not available and, if relevant, were requested by other means.

The search has delivered 19 EU-funded projects and 12 transregional documents. Only a handful of them have a focus on the deployment of the bioeconomy in the Danube macro-region; some of the outputs can be used as inspiration or even guideline to gain insight in the transnational approach aimed by the project. Complementary to this search, all partners are invited to identify further transregional projects and macroregional documents that are relevant for their regions with regard to the implementation of GoDanuBio and to include them in their reports.

Identification and short description of the projects (a) and macroregional documents (b) to be capitalised in Slovakia:

A. Projects

Danube S3 Cluster

Coordinator: South Muntenia Regional Development Agency, Romania

Start/Finish date: 07/2018 – 06/2021

Main objective/s: Fostering transnational cluster cooperation in the agri-food sector, enhancing innovation management knowledge and skills of cluster managers and cluster members, leveraging the innovation-driven entrepreneurial ecosystem in the Danube area by developing smart and coordinated cluster policies in the context of RIS3.

Measures related to demographic change, circular bioeconomy and/or rural development: Increasing the innovation knowledge and skills on innovation management, business models for self-sustainable agri-food clusters, internationalization and business scale-up (through innovation audits and trainings); increasing trans-sectorial cooperation and internationalization of agri-food clusters and cluster members (capacity-building through trainings; establishment of the Danube S3 Cluster Transnational Network; implementation of five pilot initiatives in three cross-cutting themes - healthy food, business models for circular economy and open innovation in clusters).

Did Bioeconomy Cluster take part in the project? Yes

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Danube S3 Cluster Strategy; Pilot implementation of Local Action Plan for Healthy food in Slovakia; Policy recommendations.

CELEBio

Coordinator: Central European Initiative, Italy

Start/Finish date: 06/2019 – 11/2020

Main objective/s: Facilitating the creation and expansion of industrial bio-based activities in Central, Eastern and Southern European countries with fact-based information, the elaboration of evidence-based action plans and networking.

Measures related to demographic change, circular bioeconomy and/or rural development: Concrete measures are planned in individual national action plans and dossiers for each involved country/region. In Slovakia, the action plan includes: efficient agriculture, processing of food, production of biofuels, efficient forestry, processing of wood, energy from forestry biomass, waste management.

Did Bioeconomy Cluster take part in the project? No

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Country report: Slovakia; National Action Plan: Slovakia.

POWER4BIO

Coordinator: CIRCE Foundation – Research Centre for Energy Resources and Consumption, Spain

Start/Finish date: 10/2018 – 03/2021

Main objective/s: Empowering regional stakeholders to boost the transition towards bioeconomy regions in Europe by providing them with the necessary tools, instruments and guidance to develop and implement sound sustainable regional bioeconomy strategies.

Measures related to demographic change, circular bioeconomy and/or rural development: Development of regional bioeconomy strategies and roadmaps in Central and Eastern European regions through Regional Bioeconomy Hubs; identification of bio-based business models and relevant policy and financial instruments available at regional levels.

Did Bioeconomy Cluster take part in the project? Not as a project partner. However, Bioeconomy Cluster is involved in a project Multiplier Group (within Nitra region).

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: An overview of suitable regional policies to support bio-based business models; Recommendations for the use of existing tools when developing regional bioeconomy strategies.

BioVoices

Coordinator: APRE, Italy

Start/Finish date: 01/2018 – 12/2020

Main objective/s: Increasing the quality, the relevance, the know-how and the social acceptability of bio-based products for a prosperous bioeconomy and a sustainable world; fostering the awareness of the wider public about the benefits and potential social, economic and environmental impact of the bioeconomy.

Measures related to demographic change, circular bioeconomy and/or rural development: Develop stakeholders-oriented actionable knowledge; design strategy to address the large public; raise citizens' awareness on bio-based products; support the co-creation among the stakeholders; mobilisation and mutual learning (MML).

Did Bioeconomy Cluster take part in the project? No

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Synthesis of market perspectives to develop bio-based value chains; Map of promising perspectives of bio-based product for application sectors; Guide for MML workshops.

BIOEASTsUP

Coordinator: INSTYTUT UPRAWY NAWOZENIA I GLEBOZNAWSTWA, PANSTWOWY INSTYTUT BADAWCZY, Poland

Start/Finish date: 10/2019 – 09/2022

Main objective/s: To support the BIOEAST initiative and Action Plan for transition of 11 Central and Eastern European (CEE) to bioeconomy.

Measures related to demographic change, circular bioeconomy and/or rural development: Development of regional bioeconomy strategies and roadmaps in Central and Eastern European regions through Regional Bioeconomy Hubs; identification of bio-based business models and relevant policy and financial instruments available at regional levels.

Did Bioeconomy Cluster take part in the project? Not as a project partner. However, Bioeconomy Cluster is in touch with the Slovak Ministry of Agriculture and Rural Development (Partner for Slovakia).

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Not ready yet

Capitalization of project results in Slovakia: Not ready yet

Made in Danube

Coordinator: Steinbeis-Europe-Center, Germany

Start/Finish date: January 2017 – June 2019

Main objective/s: To improve the framework conditions for innovation by supporting the collaboration process between companies and RTO in the innovation-driven field of bioeconomy.

Measures related to demographic change, circular bioeconomy and/or rural development: Increasing competitiveness of SMEs through new innovative products and services developments in the 3 domains of bio-economy (sustainable agriculture, forestry and bioenergy); Promotion of bioeconomy, circular economy and use of locally available resources for environment protection and smart, sustainable and inclusive growth; Implementation of three pilot initiatives in cross-cutting themes – smart and innovative precision farming, competence centre in wood sector, biofuels.

Did Bioeconomy Cluster take part in the project? No, but the Union of Slovak Clusters, of which Bioeconomy Cluster is member, participated in the project - BEC was involved in relevant project activities as stakeholder.

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Common Strategy to transform ideas into marketable products and services for the 3 existing regional initiatives; Pilot implementation of Local Action Plan for Smart and Innovative Precision Farming; Innovation Audit Tool; Technology Request Tool; Technology Offer tool; Policy recommendations.

DanuBioValNet

Coordinator: BIOPRO Baden-Württemberg GmbH, Germany

Start/Finish date: January 2017 – June 2019

Main objective/s: To develop new methods, strategies and tools to connect Danube actors (SMEs, farmers, universities, research institutes, etc.) in a bio-based industry. The project was focused on three bio-based value chains with high potential, such as Phytopharma, Eco-construction and Bio-based packing (bioplastic). Moreover, the hemp-industry has been included as well because hemp can be seen as a raw material for all three value chains.

Measures related to demographic change, circular bioeconomy and/or rural development: Support of the regional development through eco-innovations by diversifying the local economy and creating new employment opportunities; Development of new bio-based value chains from primary production to consumer market needs; Development and implementation of new business services for cluster organisations to support enterprises to match and innovate towards eco-innovations, products and value chains.

Did Bioeconomy Cluster take part in the project? No, but Prounion, the cluster management organization of Bioeconomy Cluster, participated in the project - BEC was involved in relevant project activities as stakeholder.

Did Košice Self-governing Region take part in the project? No

Results to be capitalized in Slovakia: Joint BioBased Cluster Policy Strategy; Common Action Plan towards better framework conditions for biobased eco-innovation in Danube Region; Cluster Tool Box; Cluster Mapping; Value Chain Mapping, Roadmapping

ATTRACTIVE DANUBE

Coordinator: Geodetic Institute of Slovenia

Start/Finish date: January 2017 – June 2019

Main objective/s: To strengthen multilevel and transnational governance and institutional capacities of policy planners involved in territorial development by establishing a permanent common transnational platform for monitoring territorial attractiveness

Measures related to demographic change, circular bioeconomy and/or rural development: Support of the regional development through development of common platform, in order to increase the attractiveness of Danube regions. Each territory has its own set of specific capitals and assets which can make it competitive in comparison to other territories. Through good governance, policies can create conditions for maximising the potentials of territorial assets and capitals for development, thus increasing the attractiveness of territories for its residents, visitors and businesses.

Did Bioeconomy Cluster take part in the project? No

Did Košice Self-governing Region take part in the project? Yes, Košice Self-governing Region had role of associated partner. The partner within this project was Technical University in Košice.

Results to be capitalized in Slovakia: Platform for monitoring territorial attractiveness, Territorial attractiveness atlas.

B. *Macroregional documents*

How to use RDPs to support rural bioeconomy?

Author/Publisher: European Network for Rural Development (ENRD)

Year of publication: 2019

Scope of the publication: Urban-rural interaction (sustainable rural development); recommendations on the use of Rural Development Programmes to support rural bioeconomy.

Measures related to demographic change, circular bioeconomy and/or rural development: Launching the value chain; supporting and investing in the bioeconomy value chain; making the rural bioeconomy value chain self-sustainable; monitoring, evaluation and learning to be more sustainable.

How to mainstream the bioeconomy in rural areas?

Author/Publisher: European Network for Rural Development (ENRD)

Year of publication: 2019

Scope of the publication: Urban-rural interaction (sustainable rural development); recommendations for rural value chains to benefit from the development of the bioeconomy.

Measures related to demographic change, circular bioeconomy and/or rural development: Enable support to rural bioeconomy within the Rural Development Programmes; bring actors together to create and support the development of resilient and innovative bioeconomy “value webs”; use RDPs smartly to provide coordinated support to rural bioeconomy initiatives; facilitate territorial approaches to optimise long-term buy-in and impact; find synergies with other ESIF instruments; develop indicators that reflect the distinctive and varied nature of bioeconomy initiatives.

EUSDR Revised Action Plan - Commission Staff working document

Author/Publisher: European Commission

Year of publication: 2020

Capitalization in Slovakia: Bioeconomy Cluster is involved in PA8 through its umbrella organisation, the Union of Slovak Clusters, which is active in several working groups.

BIOEAST vision paper

Author/Publisher: BIOEAST Initiative

Year of publication: 2018

Capitalization in Slovakia: Slovak Ministry of Agriculture and Rural Development was involved and it is framework policy document.

The biobased status in the Danube Region

Author/Publisher: DanuBioValNet Consortium

Year of publication: 2017

Capitalization in Slovakia: Project GoDanuBio has directly built on DanuBioValNet project and its individual results and outputs. Slovak partner of the DanuBioValNet (Prounion) was replaced for GoDanuBio project by more relevant partner Bioeconomy Cluster, which continues on launched activities and initiatives in bio-based industry in Slovakia.

State of play of Central and Eastern Europe's bioeconomies

Author/Publisher: NOVA Institute

Year of publication: 2018

Capitalization in Slovakia: BEC is a member of SCAR SWG for Bioeconomy and is closely following documents (including providing contributions) published by the SCAR. BEC also interprets and transfers important conclusions and recommendations into relevant national documents (Bioeconomy in Strategic Plan, RIS3 Domain for Healthy Food and Environment).

3. Findings

The analysis of projects and macro-regional documents described in Chapter 2 has showed that a variety of specific results and outputs catalysed the cooperation and development of different areas in the country concerning the demographic change, bioeconomy, circular economy or rural development. The most significant activities and results of given projects and documents are summarized in the text below.

In terms of outreach to practice, awareness raising and enhanced cooperation, the implementation of Local Action Plan for Smart and Innovative Precision Farming in Slovakia within **Made in Danube project** offered many opportunities to strengthen innovative approaches at the farm level, to enhance cooperation between the research and the farming community, to improve national (smart) policies and to encourage international cooperation. The Innovation Audits, Technology Offers/Technology Requests implemented within Made in Danube project boosted the level of innovation and competitiveness of organizations in the country. In addition, the Made in Danube Common Strategy was elaborated with aim to bring the R&D results on the market, to bridge the gap in terms of communication and joint performances among the Innovation and Technology Transfer key actors and to create better environments for networking and fostering the cooperation and exchange of knowledge between relevant stakeholders in the bioeconomy sector. The implementation of pilot on healthy food in Slovakia within **Danube S3 Cluster project** will boost the cooperation between different actors (research & business) in agri-food towards creating added value through application of (digital) bio-based solutions. Moreover, several MML workshops and other types of events have been organized in Slovakia within **BioVoices project**, contributing to mobilization of different stakeholders and to the debate on various specifics of bio-based products, value chains and on the perspectives in the bio-based market.

Furthermore, the methodologies, tools and instruments developed within these projects contributed to the identification of relevant actors in bioeconomy sector and also to the improvement of state of given area in the country. For example, guidelines for MML developed within **BioVoices project** will be used in similar public engagement and participatory approaches for improving the knowledge and enhancing the cooperation of stakeholders in bioeconomy in Slovakia. Moreover, the services identified/developed within the **DanuBioValNet's** Cluster Tool Box provided a variety of ready-to-use best-practice services supplied by well-established and competitive business-support organizations, and thus served as useful tool to facilitate the competitiveness and excellence of national institutions. In addition, the results of Cluster Mapping, Value Chain Mapping and Roadmapping in three selected areas (Phytopharma, Eco-construction and Bio-based packing) conducted within the DanuBioValNet project provided complex overview of current state of given areas at national level, based on which relevant stakeholders were identified, the cooperation among actors was strengthened, and subsequently various activities contributed to the development of the bioeconomy sector in the country.

At the policy level and in respect to transition towards circular bioeconomy in Slovakia, the strategies developed within various projects may be used as a significant source of information for the preparation of national bioeconomy strategy. The country report and action plan developed within **CELEBio project** provided an overview of available biomass in Slovakia, which may be a relevant source for the preparation of national bioeconomy strategy, since until today Slovakia does not have a dedicated strategy in this area. In the discussion on the action plan, numerous interested stakeholders from Slovakia were involved, thus bringing to attention the topic of bioeconomy and raising awareness on the potential of Slovakia in this area. In addition, the **Danube S3 Cluster** Strategy and policy recommendations will be used as argumentation for the development of future cluster policy in Slovakia, since Bioeconomy Cluster through its membership in the Union of Slovak Clusters is involved in the discussion with relevant Ministries and other public bodies on how to support sustainability of clusters in Slovakia. For the new programming period 2021 – 2027, a multisectoral and planning document will be prepared within **POWER4BIO project** to comprehensively address the development needs of the region, focused on investments from the European structural funds within the new

Operational programme Slovakia. The Slovak University of Agriculture in Nitra, which is a project partner in POWER4BIO will use the knowledge gathered in the project to cooperate on the preparation of the new Program of Economic and Social Development of Nitra self-governing region until 2030 as part of the working group within priority 2. Innovative, sustainable and competitive economy (2.1 Industry, innovation and tourism).

Moreover, Bioeconomy Cluster as the only representative from Slovakia was a member of **ENRD Thematic Group on “Mainstreaming the Bioeconomy”**, which was active in 2018/2019. BEC participated in some of the meetings of this group and exchanged with interested stakeholders across Europe on the development of sustainable bioeconomy value chains in rural areas. This knowledge was used when preparing the study “Contribution of Slovak bioeconomy to the CAP Strategic Plan for the period 2021 – 2027”, which was elaborated by BEC based on a contract with the Ministry of Agriculture and Rural Development of the Slovak Republic. In this study, interventions to support rural bioeconomy through CAP Strategic Plan in the period 2021 – 2027 were proposed. Furthermore, the knowledge gathered in this thematic group was also transferred to relevant stakeholders at national level.

4. Consequences for GoDanuBio

The analysis of the projects and macro-regional documents showed that the circular bioeconomy is becoming more frequently discussed topic in Slovakia, whereby many relevant national stakeholders participate in international projects and other activities devoted to given issue. Although the public perception of bioeconomy sector is very good and there are high-quality experts at research centers, universities and at business sector, the support provided by state is not sufficient. Therefore, it is essential not only to maintain, but also to strengthen the dialogue among policy makers and other stakeholders relevant for the area of bioeconomy. Although the bioeconomy is included in the domain Healthy Food and Environment (within Research and Innovation Strategy for Smart Specialisation of the Slovak Republic), there is no comprehensive bioeconomy strategy developed at national level. Therefore, one of the tools how to further improve the policy dialogue that may lead to the development of business activities in rural areas, creation of new value chains within the circular bioeconomy, strengthening cross-sectoral links with relevant sectors for the bioeconomy and also to the elaboration of national Strategy for the development of bioeconomy in Slovakia, is also the GoDanuBio project. The capacity building and implementation of systematic multi-level participative governance cooperation have potential to bring actors in a targeted way together for the enhancement of the socio-economic status of the regions, contribution to environmental, climate and resource protection as well as for fostering the development of rural areas.