

# **O.T3.1 Joint Strategy for the Danube Circular Bioeconomy Brain Trust**

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## Executive Summary

The GoDanubio project established the so-called Brain Trust as an open network of experts and interested parties to consolidate mutual efforts and set strategies for collaboration and identification of transformative opportunities in the field of circular bioeconomy. The Brain Trust provided the Danube Region White Paper “Cross-Border Collaboration in the Danube Region with focus on circular bioeconomy – Wishful thinking or a realistic option?” to kick-off discussions on how the EU Strategy for the Danube Region (EUSDR) can be better aligned with regional strategies with a dedicated focus on the circular bioeconomy. Two transnational dialogues and several regional dialogues were organized by the Brain Trust and the GoDanuBio project partners on strategic actions elaborated in the White Paper. The current Joint Strategy for the Danube Circular Bioeconomy Brain Trust consolidates various feedback and provides strategic guidance for the future role of the Brain Trust in implementing transnational participative governance structures for circular bioeconomy developments in the Danube Region.

The GoDanuBio project concluded that the Danube Region’s circular bioeconomy ecosystem has evolved sporadically in localized silos, without clear and coherent direction. There is little or missing coordination among the Danube Regions and the necessary infrastructure for developing new, circular bioeconomy value chains neither sufficiently exists nor is it actively supported. With the Ukraine war, surging temperatures, fires and water shortages at summer times, the signs are clear that the world is becoming more dangerous and far less predictable. Energy prices are skyrocketing, and inflation is returning. Companies are challenged by these new framework conditions and are seeking a new, sustainable approach to growth. Consequently, the case has never been stronger for more resilient, circular bioeconomy models.

In the Danube Region, Germany (specifically Baden Württemberg and Bavaria) and Austria remain the only regions with national and regional advanced circular bioeconomy strategies that combine specific policies, funding programmes, and support for networks, cluster initiatives or other intermediaries. Funding programs, if existent, are scattered and stop at regional borders. Related policies are fragmented and proper alignment between the regional and national level only exists in Austria and Germany.

While the EUSDR is ambitious in terms of sustainability, circular economy and the circular bioeconomy, previous work within the GoDanuBio project has revealed that there is a serious gap between what is planned on the macro-regional level and what is being delivered on the regional level<sup>1</sup>. This gap has to be closed, because a common, macro-regional approach is needed to move the Danube Region towards a green, sustainable, circular economy, which is well embedded into global supply chains. To succeed, regional strategies must be better aligned with the EUSDR. This is the only way the Danube Transnational Programme (DTP) can provide added value in this regard.

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<sup>1</sup> The Danube Region White Paper “Cross-Border Collaboration in the Danube Region with focus on circular bioeconomy – Wishful thinking or a realistic option?”

Consequently, the GoDanuBio partners defined a set of recommendations focussing on the facilitation of transnational cooperation<sup>2</sup>. As displayed in Figure 1, the 10 recommendations can be clustered around three main areas:

- Strengthening the interministerial collaboration
- Setting up a transnational collaboration platform, and
- Closing the investment gaps.

Table 1: Set of recommendations to improve transnational cooperation

<b>STRENGTHENING THE INTERMINISTERIAL COLLABORATION</b>	<b>SETTING-UP ONE TRANSREGIONAL PLATFORM</b>	<b>CLOSING THE INVESTMENT GAP</b>
Setting-up interministerial working groups Implement new bioeconomy advisory boards Initiate new dialogue platforms Supporting national or regional bioeconomy clusters	Strengthening the BIOEAST initiative <sup>3</sup> Ensure the continuation of the Danube Alliance	A new PA8 Working Group for circular bioeconomy, addressing investment gaps and instruments is proposed Adaptation of funding instruments to SMEs Inclusion of private investors, commercial banks and funding agencies in circular bioeconomy

As far as the implementation of these recommendations is concerned, the Brain Trust can play an important role. The Brain Trust was formed to serve as the motivation and information point for the bioeconomy development in the Danube Region. The first meeting of the Brain Trust’s initial group was held on the 28<sup>th</sup> April 2021. Furthermore, the Brain Trust was actively involved in the implementation of several successful transnational strategy dialogues. The Brain Trust has proven that it:

- serves as an institutional and infrastructural framework for mutual learning on regional policy agendas of the Danube Region in circular bioeconomy.
- provides policymakers and representative from various ministries with advice on how to set-up and execute circular bioeconomy strategies and related support schemes.
- will help to consolidate regional efforts and strengthen institutional capacities to identify transformative opportunities to tackle resilience, and sustainability challenges for reaching targets by 2030.

<sup>2</sup> See GoDanuBio project document „Transnational Recommendations in the Danube Region”, unpublished

<sup>3</sup> <https://bioeast.eu/home/>

## 1. Introduction

The GoDanuBio Interreg project's outcome highlights that there is a growing market for bio-based products across many segments (chemicals, materials, fibres, bioplastic, pharma, construction, fuel etc). Traditionally the Danube Region's countries have strong agriculture and forestry sectors as a primary source of biomass. However, the full bioresource potential including residuals, by-products, and bio-waste use remains untapped. There is a lack of data on feedstock, residuals, potential by-products availability, and end-user demand. To scale good practices or develop new circular or bio-based value chains, SMEs need direct specific information about the products of suppliers they work with (e.g., quantity, quality, certifications, storage capacities). Lack of human resources is the next obstacle for bioeconomy-related private and public sector development. There is a need to promote bioeconomy education and skills development.

The Strategy presented here is part of the WP T3: "Transnational Strategy for Circular Bioeconomy Governance Structure". This Report builds on various project's deliverables, notably the Transnational Recommendations and Danube Region White "Paper on cross-border collaboration in the Danube Region with the focus on circular bioeconomy – wishful thinking or a realistic option?" (footnote 1). The Strategy considers the recent impacts of the Ukraine war on the Danube Region, as well as incorporates the most recently updated information on partner regions' regional policy agendas, programs, funding schemes and inputs provided by partners through regional policy dialogues.

The Danube Region White Paper "Cross-Border Collaboration in the Danube Region with focus on circular bioeconomy – Wishful thinking or a realistic option?" was issued in November 2021 to kick off discussions on how the EUSDR can be better aligned with regional strategies with a dedicated focus on the circular bioeconomy. Since the DTP places significant attention on aligning regional partner strategies and facilitating cross-border cooperation, attention was given to the key question, "Do the framework conditions currently exist?". On 1<sup>st</sup> July 2022, the GoDanuBio partnership conducted the first Transnational Dialogue on Danube Strategy for a Danube Circular Bioeconomy. The output of this dialogue was an updated version of the Danube Region White Paper, as referred in chapter 3. The second transnational dialogue conducted on 3<sup>rd</sup> November 2022 and focuses on regional perspectives and setting out the Joint Strategy for a Danube circular bioeconomy.

Clusters are recognized as a driver of change in the EU, including circular bioeconomy<sup>4</sup>. A recent study from the Danube Alliance Secretariat identified around 40 cluster and business support organizations active in circular bioeconomy in the Danube Region<sup>5</sup>. Most of these clusters operate within traditional and already well-established value chains with the focus on research and innovation. The majority generally focus more on innovation projects,

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<sup>4</sup> <https://www.eea.europa.eu/soer/2020/soer-2020-visuals/clusters-of-drivers-of-change/view>

<sup>5</sup> Development of a flagship project for the PA8 of the EUSDR Region, 2022, financed by the Federal Ministry for Economic Affairs, Labour and Tourism Baden-Württemberg, under publication

engage in high-level roadmaps, and far less on the commercialization and business development needed for their members.

The objective of the Strategy is to find and identify options and related recommendations, on how to turn the circular bioeconomy potential of the Danube Region into environmental, social and economic added value.



## 2. Current situation in the regions

In February 2022, Russia invaded Ukraine and triggered one of the most destructive wars in recent European history. The United Nations High Commissioner for Refugees records 5.3 million Ukrainians have fled Ukraine and more than two-thirds of them are currently registered for temporary protection or similar displaced person schemes in Europe<sup>6</sup>. The majority of these refugees are currently in countries neighboring the conflict, with Poland alone accommodating 1.2 million of these migrants. The Figure 2 below shows the countries hosting the highest number of Ukrainian migrants.

Figure 1: Countries hosting the highest number of Ukrainian migrants

Countries neighbouring Ukraine						
Country	Data Date	Individual refugees from Ukraine recorded across Europe	Refugees from Ukraine registered for Temporary Protection or similar national protection schemes	Border crossings from Ukraine*	Border crossings to Ukraine**	
Russian Federation***	21 June, 2022	1,305,018	Not applicable	1,305,018	Data not available	
Poland	21 June, 2022	1,180,677	1,180,677	4,146,144	2,073,052	
Republic of Moldova	21 June, 2022	85,797	Not applicable	507,552	138,488	
Romania	21 June, 2022	82,733	40,202	691,413	370,707	
Slovakia	21 June, 2022	78,972	78,782	525,620	254,316	
Hungary	21 June, 2022	25,042	25,042	814,607	Data not available	
Belarus	20 June, 2022	9,006	Not applicable	16,660	Data not available	
<b>Total</b>		<b>2,767,245</b>	<b>1,324,703</b>	<b>8,007,014</b>	<b>2,836,563</b>	

\*\*\*The figure for individual refugees recorded in the country is an estimate as potential further movements or returns cannot be factored for the time being.

Source: UNHCR

In addition to the human catastrophe, the economy both in Europe and globally has been hit hard. Pre-war Ukraine was a prominent exporter of wheat, and many developing countries relied on Ukraine for a large part of their wheat imports. Ukraine's wheat exports were so significant, that in 2020 Ukraine exported more wheat globally than the entire European Union. The war in Ukraine increased energy prices and slowed down global growth. Higher energy and food prices have pushed inflation to levels unseen for many years.

Private consumption and investment were the key drivers of growth in many Danube Region countries. Rising wages and remittances, together with increasing private credit, have supported private consumption. Investment was particularly strong in Serbia and in Bosnia and Herzegovina, partially as countries accumulated inventories to avoid value chain bottlenecks and accelerated investment in the energy sector<sup>7</sup>. Sustained export growth has also acted as a key growth driver in many Danube Countries. New economic challenges, such as inflationary trends in raw materials, food, fuels, and energy prices, started confronting the region in the second half of 2021 and intensified after the beginning of the war in Ukraine and subsequent sanctions against Russia. Currently, the region's recovery seems at risk.

However, the economy in the Danube Region was already slowing before the outbreak of Ukraine war. After reaching an estimated 5.5% in 2021, global growth was expected to slow

<sup>6</sup> <https://data.unhcr.org/en/situations/ukraine>

<sup>7</sup> The World Bank, 2022, Beyond the Crises – Western Balkan Regular Economic Report No. 22, <https://openknowledge.worldbank.org/bitstream/handle/10986/38189/P17947818ec26c8c17fe014901194ac104a1b5d70a2a.pdf?sequence=1&isAllowed=y>

to 4.1% in 2022. The projected slowdown reflected intermittent COVID-19 flare-ups, the exhaustion of pent-up demand, reduced monetary and fiscal policy support, and lingering supply disruptions. Logistical bottlenecks, shortages of intermediate inputs, and sluggish supply of energy commodities had been fueling inflationary pressures. Inflation had repeatedly surprised central banks and market participants on the upside. After declining to 1.2% in May 2020, inflation reached 6.5% in February 2022<sup>8</sup>, mainly due to supply disruptions and rising food and energy prices. Inflation in the Danube Region is expected to peak in the second half of 2022 before declining through 2023, aided by well-anchored expectations in the majority of countries.

Table 1 reveals the development of the GDP in selected Danube Countries in 2021 and the predictions for 2022 (as of September 2022). It becomes obvious that GDP growth in 2022 is much lower than in 2021.

*Table 2: Development of the GDP in selected Danube Countries in 2021 and the predictions for 2022 (as of September 2022)*

Country	GDP Growth in 2021 [%]	Projected GDP Growth for 2022 [%]	Source <sup>9</sup>
Austria	4.5	4.6	EU
Bosnia-Herzegovina	7.1	1.1	EU
Bulgaria	4.2	3.1	EU
Croatia	10.2	6.0	EBRD
Czech Republic	3.3	2.5	EU
Germany	2.9	1.6	EU
Hungary	7.1	5.5	EU
Moldova	13.9	0.7	ERDB
Montenegro	12.4	6.9	ERDB
Romania	5.9	5.8	EU
Serbia	7.5	3.3	ERDB
Slovakia	3.0	1.9	EU
Slovenia	8.1	6.2	EU

<sup>8</sup> The World Bank, 2022, Implication of the war in Ukraine for Global Economy, <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/Implications-of-the-War-in-Ukraine-for-the-Global-Economy.pdf>

<sup>9</sup> EBRD: European Bank for Reconstruction and Development; EU: European Commission

### **3. Circular bioeconomy policies and strategies in the Danube regional context**

During the project's implementation the different bioeconomy related policies of the partner countries were analysed and finally updated at the end of the project. The last version of The Danube Region White Paper "Cross-Border Collaboration in the Danube Region with focus on circular bioeconomy – Wishful thinking or a realistic option?" provides further country / region specific insights. At the date of writing, the participating countries can be divided into three groups according to their progress related to circular bioeconomy strategies and related policies:

- i) Countries with existing strategies / policies in place (Austria and Germany)
- ii) Countries with strategies / policies in planning stage (Croatia, Czech Republic, Hungary and Romania)
- iii) Countries with no specific policy on bioeconomy, but topic-related policies (Bulgaria, Serbia, Slovakia and Slovenia)

Since the last time this issue was reviewed, four countries (listed in point ii) have made tremendous progress. They all now have circular bioeconomy strategies in the planning phase or prospects of it. In the case of Romania, e.g., the new policies are related with sustainable development in general and the Circular Economy<sup>10</sup>, but with the bioeconomy gaining momentum at the policy level. This marks an encouraging improvement from the situation just a few months ago. This is a testament to the individuals and organizations in those states who have driven this agenda with great energy and enthusiasm. It is also an encouraging sign that suggests some participating countries are following the lead of other European Member States, but also serving as inspiration for others.

These developments enlighten the next steps to be followed. Firstly, Member States which have yet to plan a circular bioeconomy policy must aim to emulate those which now have. Secondly, states which are now in the planning stage must seek to emulate the states with fully operational circular bioeconomy strategies in place by implementing their own. The Member States and relevant actors within them must continue to offer support to each other in this regard.

### **4. Transnational recommendations for the development of the circular bioeconomy in the Danube Region**

The GoDanuBio partners developed a set of recommendations to stimulate transnational cooperation as one crucial approach to respond to the current fragmentation of circular bioeconomy actions implemented or planned to be implemented in the different Danube regions. These recommendations were described in detail in one of the project deliverables<sup>11</sup> and can be summarized as follows:

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<sup>10</sup> <https://dezvoltaredurabila.gov.ro/strategia-nationala-privind-economia-circulara-13409762>

<sup>11</sup> GoDanuBio deliverable „Transnational Recommendations in the Danube Region”; <https://www.interreg-danube.eu/approved-projects/godanubio/outputs>

### ***Strengthening the interministerial collaboration***

**The work of ministries involved in circular bioeconomy** can be connected through interministerial working groups in each of the Danube regions / countries. Having political cohesion in mind, there should be no leadership by a single ministry. Neither science, research, nor agriculture/forestry ministries should be in the lead because the consistency of delivering value chains in the economic outcome for companies and society would be less easily reached.

**New bioeconomy advisory boards on a country and/or regional level**, with broad cross-sectorial and transdisciplinary expertise in scientific, economic, environmental, and social disciplines, to provide policymakers with advice on how to set up and execute circular bioeconomy strategies and related support schemes.

**New dialogue platforms shall be set up** with science and research institutions, industries, intermediaries, trading firms, and consumer organizations to get precise information about needed activities, and to identify and maintain current trends and pitfalls in bioeconomy implementation. These platforms could be also able to give advice to policymakers and collaborate closely with bioeconomy advisory boards

**Supporting national or regional bioeconomy clusters (whether bioeconomy clusters or "bioeconomised" clusters)**. Clusters are recognized as a driver of circular bioeconomy in the region. In this case, the individual regions are essential in addition to the interregional collaboration across regions, states, countries, Europe, and the global level. To provide impactful services to their members and play a transformative role, they need to be equipped with relevant firm-level data, circular models, modern digital tools and part of the cross-regional network.

### ***Setting-up one transregional initiative and platform***

**The BIOEAST initiative is a forward-looking governmental level policy forum.** The support and participation of ministries and experts in the work of the BIOEAST Initiative should be stimulated. So far, Ministries for Agriculture are the most represented, whilst other important Ministries are missing. The top down approach to the bioeconomy policy should be linked to the bottom-up initiatives like the Danube Alliance<sup>12</sup>.

**The continuation of the Danube Alliance** could drive a circular bioeconomy in settings where no bioeconomy strategy currently exists, and clusters should drive this. The Danube Alliance, PA8 flagship project, sprang to life to strengthen the competitiveness of SMEs in the Danube Region. The Danube Alliance closely works with clusters to incubate value-chain project ideas with significant potential in terms of resilience, circularity and bioeconomy. The Danube Alliance shall continue and evolve into a Danube Region wide network with databases of good practices, models and tools for effective and ongoing dissemination of knowledge, and collaboration between a variety of networks.

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<sup>12</sup> <https://competitiveness.danube-region.eu/danube-alliance/>

## ***Closing the investment gap for SMEs***

**A new PA8 working group for circular bioeconomy, addressing investment gaps and instruments is proposed.** Instruments available at the EU level do not exist or are not replicable to the Danube macro-region. This needs a set of aligned activities and individual SMEs cannot do it. It is not only about getting to technology readiness levels 7 and 8 but going to 9 and having production facilities up and running in the Danube Region. The PA8 circular bioeconomy working group can work directly with European Commission on instruments to make circular economy transitions that work for SMEs and industries. In this regard, collaboration with other important projects or initiatives, like the CEE2ACT project<sup>13</sup> and the BIOEAST initiative would help to facilitate such dialogue.

**Adaptation of financial instruments to facilitation of investments in circular bioeconomy.** The financial push for investment becomes highly relevant when it comes to commercialization and bringing innovation to the market. It is not an issue about investing in one or two pilot plants for R&D, or supporting limited numbers of start-ups. Rather, it is about accompanying today's existing industry and engagement of **a large portion of SMEs** in this circular bioeconomy transformation. The EU competition rules strongly support R&D for funding and not investments. Existing publicly available funding mechanisms are highly bureaucratic and they are fragmented and distributed among a variety of programs, ministries and agencies. While the European Investment Bank is interested in investing in large-scale facilities, financial instruments are missing to support SMEs ready to invest, e.g., for upscaling or ramp-up of bioeconomy related production or processing.

**Inclusion of private investors, commercial banks and funding agencies in circular bioeconomy.** While several sustainability frameworks<sup>14</sup> (ESG, SDG, LCA) exist, they need to address the whole value chains and interlink SMEs, private investors, banks and funding agencies in a circular bioeconomy. They are mainly based on past performance and are not used as an assessment for future investments that are radically different from traditional ones. The framework development should be a joint activity of clusters, regional agencies and financial institutions. This can be done under PA8 leadership.

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<sup>13</sup> <https://www.cee2act.eu/>

<sup>14</sup> Environmental, social and governance (ESG), Social Development Goals (SDG), Life Cycle Assessment (LCA)

## 5. Conclusion

The circular bioeconomy is clearly vital for Europe, both at the economic level and the ecological level. It is encouraging to see countries/regions increasingly moving in this direction, however slowly the case may be in some regions. There are signs that some latecomers to this are starting to catch up. The circular bioeconomy presents a golden opportunity to reduce waste, revive declining regions, become less dependent on fossil energy sources and make better use of biological resources. It will help to revive these regions economically and ecologically and is a strong compliment to the implementation of the Sustainable Development Goals in the Danube Region.

Sustainability is critical given Europe's commitment to a greener and more environmentally stable future. Perhaps the key ingredient is the skill and commitment of the people of the Danube Region, and their involvement will be critical to the success of the circular bioeconomy and sustainability. They can be guided by governments at the European, national and local level, as well as by educational institutions, professional associations, clusters and civil society.

Despite the challenges, there is room for optimism. Europe will be greener, more digital, more resilient and better prepared for the current and forthcoming challenges. According to the EUSDR, the Danube Region remains committed to a future that is more environmentally friendly, less polluting, and more circular in nature. Nevertheless, there is still a huge gap between policy wishful thinking and the reality. Most of the Danube Regions are still at the beginning to turn policy thinking into practice. But it will take time and even if the Danube regions might proceed, transnational cooperation across borders will remain a key challenge.

It is not a lack of strategies or ideas on how to move further in term of circular bioeconomy. The GoDanuBio project is not the only initiative that spent efforts in this regard. It is more a challenge of implementation.

As far as the implementation is concerned, the GoDanuBio project partners created an instrument, the Brain Trust, which can contribute to the implementation of the transnational cooperation recommendations. Consequently, the role of Brain Trust in general, but also in supporting these recommendations, shall be strengthened.

From now on, it seems important that the Brain Trust works closely with the circular bioeconomy drivers in the Danube Region, to enable decision makers to keep a systemic approach on the development and progress monitoring of the circular bioeconomy in the Danube Region. Those drivers are:

- The Danube Alliance will support a circular bioeconomy in the Danube Region. The Danube Alliance, PA8 flagship project, sprang to life to strengthen the SME competitiveness in the Danube Region. It is the fastest growing cluster network in the region and a value chain incubator with significant potential in terms of resilience, circularity and bioeconomy. The Danube Alliance will provide the Danube-wide

network with databases of good practices, models and tools for effective and ongoing knowledge dissemination and collaboration between a variety of networks.

- The BIOEAST initiative is a forward-looking policy forum on the governmental level. At the mid-term, it should facilitate the participation of further ministries (besides Agriculture and Research ones) within the Initiative, as well as experts in their Thematic Working Groups. A top-down approach related to the bioeconomy policy should be linked to the bottom-up initiatives like the Danube Alliance.

The Brain Trust can provide strategic inputs to the circular bioeconomy policy dialogues. This can be reached by designing and implementing transnational and regional policy fora. In order to ensure proper sustainability and durable results, it is advisable to institutionalize the Brain Trust via the set-up of a Brain Trust Secretariat. Such a secretariat can be operated in the frame of the Danube Alliance or it can be embedded in the PA8 as a dedicated WG or PA8 activity.