



Regional Innovation Valleys for Bioeconomy and Food Systems

Concept note

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*Research and
Innovation*

INTRODUCTION: CONCEPT, PURPOSE, AND SCOPE.....	3
1. OBJECTIVES AND BENEFITS OF THE RIV4BFS INITIATIVE	5
1.1. <i>Specific objectives</i>	5
1.2. <i>Benefits of RIV4BFS</i>	6
1.3. <i>Benefits for Member States and regions</i>	6
2. WHAT IS A RIV4BFS?	7
2.1. <i>General description</i>	7
2.2. <i>Call for expression of interest to become a Regional Innovation Valley for Bioeconomy and Food Systems (RIV4BFS)</i>	7
2.3. <i>Common ambitions of Regional Innovation Valleys for Bioeconomy and Food Systems</i>	8
3. HOW DO WE WANT TO DEVELOP THIS FURTHER?	8
3.1. <i>Recent and ongoing calls for Regional Innovation Valleys</i>	8
3.2. <i>Development of the RIV4BFS concept</i>	9
3.3. <i>Opportunities to further unlock the RIV4BFS potential</i>	9

INTRODUCTION: CONCEPT, PURPOSE, AND SCOPE

In July 2022 the European Commission published the Communication “**New European Innovation Agenda**” (NEIA). The document presented five important flagships. Under the flagship called “*accelerating and strengthening innovation in European Innovation Ecosystems across the EU and addressing the innovation divide*” NEIA introduced the initiative of **Regional Innovation Valleys** (RIV’s).

RIV’s will be specialised regional ecosystems in thematic/technological areas (including deep tech) that are critical for EU industrial value chains contributing to the twin green and digital transitions and a resilient society.

In NEIA, **Regional Innovation Valleys** aim to harness the potential of deep-tech innovation across the different EU territories and addresses the innovation divide in innovation priority areas such as **food security, renewable energy, circular economy, digital transition, healthcare system and other**. It has set the ambitious goal **to identify up to 100 regions** committed to enhance the coordination and direction of their research and innovation investments and policies at regional level and to collaborate on inter-regional innovation projects including deep tech innovation.

Regional Innovation Valleys will be implemented through a **Cofund Action** under the Horizon Europe Pillar III “European Innovation Ecosystems” with the following call for funding: “Interconnected Innovation Ecosystems (HORIZON-EIE-2023-CONNECT-03)” ([Funding & tenders \(europa.eu\)](https://ec.europa.eu/easip/en/funding-tenders)).

The initiative has an overall funding of EUR 100 million from Horizon Europe (DG RTD) plus EUR 70 million from the interregional innovation investments (I3) instrument from DG REGIO. The initial 2023 calls will allocate EUR 60 million from Horizon Europe and EUR 62 million from the I3 instrument.

In parallel a call for **Expression of Interest** to become Regional Innovation Valleys was launched in 2023 (see section 2.2). Regions could participate in this call for expression of interest and indicate how they commit to the conditions set up in the call to become a Regional Innovation Valley.

RIVs are a **bottom-up instrument** bringing together cohesion and innovation policies and are a novelty in EC funding.

RIVs are crucial because value chains are evolving and initiatives such as RIVs can play a major role in helping to develop innovative solutions **to contribute to the strategic sovereignty of Europe**.

With the main goal of supporting NEIA Communication, its priority areas and the RIV’s, **a thematic use case** can be built based on the Bioeconomy principles: **the Regional Innovation Valleys for Bioeconomy and Food Systems (RIV4BFS)**.

RIV4BFS could make an important contribution to reach the target specified in NEIA of **building 100 regional deep-tech innovation valleys**.

Therefore, this **concept note** aims at encouraging European regions **to focus on bioeconomy and food systems when applying to the RIV’s funding call** (RIV4BFS as a thematic use case) facilitating the development of RIV4BFS thematic initiatives, the mutual learning among regions and further thinking on funding mechanisms and collaboration among member states and regions.

This concept note does not constitute an additional set of requirements to those specified in the Expression of Interest or in the specific funding calls. **RIV4BFS as a thematic RIV's use case** must follow the criteria and regional commitments described in the Expression of Interest and the specific funding calls. However, it constitutes a guideline for member states and regions which wish to engage in the transformation of their region to sustainable and circular bioeconomies and food systems and cooperate with like-minded regions.

About target participants

RIV4BFS can involve actors from across the **quadruple helix**, meaning promoting **a model of cooperation between industry, academia, civil society, and public authorities, with a strong emphasis on citizens and their needs**. The participation of private actors will be fundamental, either for the joint implementation of proposed activities, and/or their possible co-funding; for example, via links and cooperation with innovative SMEs, start-ups, industry, private entities supporting innovation and innovators, including clusters, associations, as well as investors and foundations. The multi-actor approach concept can be integrated in RIV4BFS engaging representatives from research & technology organisations, industry, farmers, policy makers...)

RIV4BFS can be based on and ensure complementarity and synergies with existing innovation-related initiatives such as different typologies of **regional innovation ecosystems** and entrepreneurial initiatives, where this makes the inter-regional collaboration in projects more ambitious or increases their impact and expected results. For example, with the "start-ups villages" initiative for rural areas, with EDIHs (European digital innovation hubs), with bioeconomy and/or agrifood clusters, with thematic regional technology parks, with Living Labs, ⁽¹⁾, etc.

About deep tech innovation and bioeconomy

Deep tech innovation aims to provide concrete solutions to our societal problems by finding its source in a deep interaction with the most recent scientific and technological advances and by seeking to produce a profound impact in the targeted application areas.

In the context of RIV4BFS, deep tech mainly refers to technologies including but not limited to biotechnological processes and biomanufacturing ⁽²⁾, technologies in the field of biochemicals and biomaterials, bioremediation, biopharmaceuticals, and technologies and processes to produce sustainable and healthy food and food ingredients.

It can equally apply to primary production and bio-industrial processes combined with advanced digital, big-data and machine learning technologies.

⁽¹⁾ Living labs can be understood as user-centered, open-innovation ecosystem, often operating in a territorial context, integrating research and innovation processes within a public-private-citizens partnership. (Modified and adapted from Wikipedia).

⁽²⁾ See definition by EuropaBio: "Biomanufacturing is the use of biological mechanisms to i) synthesize products, ii) act as tools or iii) undertake processes, at a scale required for commercial use" https://www.europabio.org/wp-content/uploads/2023/05/Biomanufacturing_Definition_Official.pdf

1. **OBJECTIVES AND BENEFITS OF THE RIV4BFS INITIATIVE**

RIV4BFS aim to boost the EU bioeconomy in support of the objectives of the EU Bioeconomy Strategy, with a particular focus on regional development and regional cooperation.

The EU Bioeconomy Strategy and the EU Bioeconomy Progress Report define Bioeconomy and Bioeconomy Policy as follows:

The bioeconomy covers all sectors and systems that rely on biological resources (animals, plants, micro-organisms and derived biomass, organic waste), their functions and principles. It encompasses all sectors and associated services and investments that produce, use, process, distribute or consume biological resources, including ecosystem services.

Bioeconomy policies should be built on all sustainability dimensions. As such, bioeconomy is a natural enabler and result of the European Green Deal transformation. The role of bioeconomy in providing protection to natural resources is key, as well as e.g., its role promoting efficient systems for the collection and management of organic residues.

RIV4BFSs provide therefore also an excellent opportunity to strengthen the macro-regional initiatives with a focus on bioeconomy like BIOEAST⁽³⁾ (see ongoing and upcoming projects)⁽⁴⁾, as well as PRIMA and BLUEMED initiatives among others.

1.1. Specific objectives

Specific objectives of RIV4BFS initiative are:

- **Scale and speed-up solutions** in available technological areas (including deep tech) for bioeconomy and food systems. RIV4BFS will test and demonstrate place-based innovations in high TRL levels allowing innovators to bring their ideas to the market and creating a favourable environment to promote the scalability potential of businesses.
- **Increase inter-connectedness** (through exchanges/networking/mutual learning/awareness raising, promoting education and skills ...) among existing European regional innovation ecosystems with a focus on bioeconomy and food systems. Share knowledge and experience creating interregional collaboration to increase the capacity building and shared competencies and joint projects.

Inter-connectedness will help **to increase the level of reproducibility** (meaning regional RIV4BFS success stories assessed to be developed in other regions) as well as the amount and quality of best practices exchanged.

- **Promoting a dialogue with member states and regions on potential and future funding for RIV4BFS valleys** under ongoing/future NEIA or national and regional calls initiatives.

RIV4BFS will be 'unique' by following a number of common ambitions (see section 2.3) building on the key sustainability principles of sustainable and circular bioeconomy.

⁽³⁾ The Central-Eastern European Initiative for Knowledge-based Agriculture, Aquaculture and Forestry in the Bioeconomy

⁽⁴⁾ Horizon 2020 project BIOEASTsUP; Horizon Europe project CEE2ACT; Horizon Europe call HORIZON-CL6-2023-GOVERNANCE-01-8: Mobilising BIOEAST networks for the development of national bioeconomy action programmes in support of the European Green Deal

1.2. **Benefits of RIV4BFS**

- RIV4BFS will contribute to the **objectives of the EU Green Deal and of the EU Bioeconomy Strategy**: (i) ensure food and nutrition security, (ii) manage natural resources sustainably, (iii) reduce dependence on non-renewable, unsustainable resources, (iv) mitigate and adapt to climate change and (v) strengthen European competitiveness and create jobs. They will help, among others, in the just transition to climate neutral societies, the transformation to sustainable food systems, fighting water scarcity and building up resilience.
- RIV4BFS will strengthen and accelerate the **deployment and up-scaling of sustainable and circular bioeconomy** taking into consideration the potential of regionally available, sustainably sourced biological resources (including marine and freshwater resources and resources from mountains and rural areas) making full use of biomass streams that are currently wasted, technological innovations, and human skills to address the most urgent local and global challenges (e.g., reduce the impact on water resources, promote water-smart management systems, improve the management of nitrogen and carbon, reduce the use of fertilizers and pesticides and will include Nature Based Solutions (NBS). The link with the territory is key.
- RIV4BFS will provide **stimulus to the twin green and digital transition** of our production and consumption systems by developing and deploying technological and deep-tech solutions to and support the transformation towards green, resilient, and fair regional communities. They will **strengthen research and innovation** of interconnected bioeconomy and food systems value chains in and beyond regions.
- RIV4BFS will work together towards a **vision of environmental, social, and economic sustainable future** through bundling efforts from regional and local governments, entrepreneurs, investors, and civil society. They will benefit from transformative deep tech and digital solutions enabled by a welcoming infrastructure and societal acceptance. They will cooperate in a network of partner 'valleys' to **share experiences and best practices**.

1.3. **Benefits for Member States and regions**

Additional EU action under the RIV4BFS will bring added value to the valuable work that is already ongoing in Member States and regions. It can network and connect existing regional innovation ecosystems and clusters across EU geographies and help develop new clusters, in specific thematic innovation areas in bioeconomy and food systems, particularly in regions where the potential of available sustainable biomass is not fully exploited.

The purpose of the RIV4BFS is therefore to support the work of regions and Member States to realise transformational innovation and shift towards sustainable and circular bioeconomy and food systems. A lot of this work is already ongoing and is actively promoted by regional and Member State authorities, to deliver on their policy objectives, or by other actors (e.g., RTOs, universities, companies, living labs, citizen initiatives, public and private investors) in the innovation and investment communities. These actors are also making use of EU initiatives funding and co-financing under various forms to support a coherent policy mix that is adapted to their context and needs (see section 3.3.).

RIV4BFSs can support the exchange of best practices, help to share, and complement resources (e.g., for piloting), to collaborate on solutions, resources, and investments. The initiative could mobilise potential EU funding (e.g., additional Horizon Europe funding calls for RIV4BFS), use existing calls with a regional focus or facilitate pooling of funding.

It can support policy makers in regions and member states through an EU community of practice to align and monitor the innovation in their Bioeconomy and Food Systems strategies with the transformative systemic changes their policies aspire to, and to put in place coherent policy mixes across different levels of governance (EU, Member States, regional) that are effective, timely and efficient in advancing their policy ambition.

2. **WHAT IS A RIV4BFS?**

2.1. ***General description***

Regional Innovation Valleys for Bioeconomy and Food Systems are existing or developing **regional innovation ecosystems that involve actors from across the quadruple helix** based notably on their respective national/regional smart specialisation strategies with a focus on bioeconomy and food systems, in **thematic/technological areas (including deep tech)** that will be critical for EU value chains.

RIV4BFS will allow innovators to bring their ideas to the market and enable innovations to be scaled up at EU level and facilitating the link with the private sector and other research and innovator actors. Deep tech innovation will be key to strengthen their efficiency and potential to innovate.

Their approach to innovation should be systemic, going beyond technologies to integrate other bottlenecks of system change in food and bioeconomy such as infrastructure, regulation, or consumption patterns. They will foster the creation of efficient, open, inclusive, and interconnected European innovation ecosystems in line with the New European Innovation Agenda.

RIV4BFS cover the entire bioeconomy (connecting food and/or bio-based value chains). **RIV4BFS can have varied sizes and configurations (having a variety of stakeholders typologies and flexibility is key)** according to the regional priorities in bioeconomy and food systems helping to restore local ecosystem and soil health over regional sustainable biomass sources and the connection of different bioeconomy value chains and actors to make full use of biomass side streams to the end-use as nutritious food and/or sustainable bio-based materials.

RIV4BFS will be crucial for the development of an EU sustainable and circular bioeconomy. The development of RIV4BFS can be stimulated in all Member States and Associated Countries and be adapted to the different economies, local environmental conditions, and potential of sustainable primary and secondary biomass sources.

2.2. ***Call for expression of interest to become a Regional Innovation Valley for Bioeconomy and Food Systems (RIV4BFS)***

RIVs will support of key EU priorities contributing to the areas on achieving circularity, reducing the reliance on fossil fuels, increasing global food security, mastering the digital transformation (including cybersecurity), improving healthcare and other such as particular cases on bioeconomy and food systems.

Regional Innovation Valleys for Bioeconomy and Food Systems (RIV4BFS) will follow the same call for expression of interest under the NEIA initiative, see [Call for expression of interest for Regional Innovation Valleys is now open \(europa.eu\)](https://europea.eu)

Regional Innovation Valleys (RIVs) described in NEIA will address the innovation divide between regions by actively supporting regions with lower innovation performances ⁽⁵⁾; they will also build on strategic areas of regional strength and specialisation (defined in their regional smart specialisation strategies), therefore RIV4BFS will act in the same way.

⁽⁵⁾ 'Moderate' or 'emerging' innovator region according to the Regional Innovation Scoreboard as a reference, and in the case of entities representing national authorities, the European Innovation Scoreboard.

2.3. Common ambitions of Regional Innovation Valleys for Bioeconomy and Food Systems

RIV4BFS initiative builds on elements of NEIA's Regional Innovation Valleys, the specific Expression of Interest, and the associated Call for proposals, but it builds also on bioeconomy principles and food system thinking. RIV4BFS have thus the following ambitions in common:

- **RIV4BFS are pursuing a concrete and specific goal** that contributes to the transition of the innovation ecosystem or 'valley' to a sustainable and circular bioeconomy and/or food system in the context of their regional policies. In view of the wide range of sectors and services each bioeconomy encompasses, this goal can be of very different nature, and depends on the local priorities. For example, to establish a zero-waste valley or reach a net-zero (GHG emissions) local food systems within a certain time, to transition to a zero pollution or zero plastic textile system, or to live within local biosphere limits. The mission and goals of a RIV4BFS are set within well-defined, coherent, and politically endorsed regional policy and strategy choices.
- **RIV4BFS consider all three pillars of sustainability:** (1) environment: management of land and biological resources within ecological/planetary boundaries; (2) economic: sustainable value chains and consumption; and (3) society: equity and inclusion for a fair and just transition. ⁽⁶⁾
- **RIV4BFS build full value networks** of products and services that are interconnected and ensure that no resources are 'wasted'. All resource streams are used to optimize societal benefit and according to the cascading principle of biomass use. Therefore, RIV4BFS typically do not focus on single products or value chains but on multiple products and services coexisting in an industrial ecosystem symbiosis.
- **RIV4BFS rely on regionally sourced sustainable resources**, to strengthen resilience and strategic autonomy on imported energy, biomass, or other materials, and to avoid relying on the import of embedded environmental or social negative impacts. This is done through a multi-disciplinary approach involving primary producers, industry and consumers and contributing to the uptake of nature-based solutions, agroecology practices, and soil and ecosystem health.

In this context, the reinforcement of rural and mountain areas of Europe is key.

3. HOW DO WE WANT TO DEVELOP THIS FURTHER?

3.1. Recent and ongoing calls for Regional Innovation Valleys

Call for Expression of Interest for Regional Innovation Valleys

- A call for expression of interest for Regional Innovation Valleys has been launched to strengthen and advance European innovation ecosystems, connecting all EU territories, to address Europe's burning societal challenges. Regions were invited to set their commitment by 18 September 2023, see [Call for expression of interest for Regional Innovation Valleys is now open \(europea.eu\)](https://europea.eu)

⁽⁶⁾ See EU Bioeconomy Progress Report [EUR-Lex - 52022DC0283 - EN - EUR-Lex \(europea.eu\)](https://eur-lex.europa.eu/lexuri/cs/l?uri=52022DC0283)

European Innovation Ecosystems & Interregional Innovative Investments calls for proposals

- The Commission has launched two calls for proposals on 17 May 2023 under the European Innovation Ecosystems (EIE) part of Horizon Europe, and the Interregional Innovative Investments (I3) of the European Regional Development Fund (ERDF). With a focus on addressing the innovation divide, a total of €170 million is allocated, €100 million and €70 million, respectively. See here the [Online Info Session "Regional Innovation Valleys - calls for proposal" 25 May 2023 \(europa.eu\)](#) and the specific call here [Funding & tenders \(europa.eu\)](#)

3.2. Development of the RIV4BFS concept

Consultation with countries through the EBPF

- The Commission consulted Member States on the draft concept note of RIV4BFS (this document) through the European Bioeconomy Policy Forum (EBPF) with a dedicated on-line meeting at high-level on 25 of May and at expert-level on 5 July 2023.

Launch event in Plovdiv, Bulgaria on 13 October 2023

- RIV4BFS initiative will be launched by a high-level representative from the European Commission during an event in Bulgaria in October 2023. The event will be co-organised with the Agricultural University of Plovdiv and the BIOEAST initiative.

3.3. Opportunities to further unlock the RIV4BFS potential

Actions under Horizon Europe

- RIV4BFS are included in the draft Horizon Europe Strategic Plan for 2025-2027
- RIV4BFS can connect to ongoing and upcoming projects, such as:
 - [ShapingBio: Shaping the future bioeconomy across sectoral, governmental and geographical levels](#)
 - [CEE2ACT: Empowering the Central and Eastern European Countries to Develop Circular Bioeconomy Strategies and Action Plans](#)
 - HORIZON-CL6-2023-CircBio-01-10: Supporting the fair and just transition from GHG-intensive economies facing challenges towards circular bioeconomy model regions (BIO2REG:)
 - HORIZON-CL6-2023-GOVERNANCE-01-8: Mobilising BIOEAST networks for the development of national bioeconomy action programmes in support of the European Green Deal (BOOST4BIOEAST)
 - HORIZON-CL6-2023-CircBio-02-1-two-stage: Circular Cities and Regions Initiative (CCRI)'s circular systemic solutions
 - HORIZON-CL6-2024-CircBio-01-7: Demonstrating the fair and just transition from GHG-intensive economies facing challenges towards circular Bioeconomy model regions
 - HORIZON-CL6-2024-CircBio-01-9: Circular bioeconomy start-up villages

Actions under Circular Bio-based Europe Joint Undertaking (CBE JU)

- The CBE JU may be closely involved, especially as it is launching a widening strategy in collaboration with its States Representative Group. The widening strategy will enhance the participation of, first, EU Member States ⁽⁷⁾ and second, potentially some EU regions that so far are less represented in CBE JU projects and actions to stimulate balanced geographical outreach of calls for proposals as well as Research, Innovation and bio-based deployment across countries and regions. Depending on the outcomes of the CBE JU widening strategy, and of the RIV calls, this might allow a connection between both EU instruments, to serve a longer-term objective of supporting some aspects of future bioeconomy and food systems valleys, given an overall focus of CBE JU on regional circular bio-based innovation for, i.e., rural, and coastal areas and related business models and stakeholders.
- RIV4BFS are included in the CBE JU Multiannual Programming 2024-2027

Connecting the RIV4BFS with other initiatives

- To develop deep-tech technologies and to reach higher TRL levels and therefore to facilitate product market uptake, RIV4BFS can connect with European Startup initiatives such as the Startup Village initiative through the Horizon Europe HORIZON-CL6-2024-CircBio-01-9 topic "Circular bioeconomy start-up villages" in the work programme 2023-2024 and with the *European Innovation Council* to support startups and SMEs (e.g., Women Tech EU).
- RIV4BFS can also connect to the Circular Cities and Regions Initiative ⁽⁸⁾, which aims to accelerate the demonstration, deployment and up-scaling of circular systemic solutions as well as innovative governance and business models at the local and regional scale.

⁽⁷⁾ Bulgaria, Croatia, Cyprus, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia (defined in Art. 349 TFEU).

⁽⁸⁾ More information on the CCRI website: <https://circular-cities-and-regions.ec.europa.eu/>