



BioINSouth

Supporting regional environmental sustainability
assessment for the BIO-based sectors to improve
INnovation, INdustries and INclusivity in SOUTH Europe



Deliverable 3.1 HUB Guidelines



Cyprus

Czech Republic

France

Greece

Portugal

Italy

Slovenia

Spain

Türkyie

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Abbreviations	
ACBS	Andalusian Circular Bioeconomy Strategy
BIC	Bio- based Industries Consortium
CBE- JU	Circular Bio- Based Europe Joint Undertaking
DoA	Description of Action
EC	Executive Committee
KoM	Kick-Off Meeting
MARG	Multi- Actor Regional Groups
NCP	National Contact Point
SMEs	Small and medium-sized enterprises
SRIA	Strategic Research and Innovation Agenda
TWG	Thematic Working Group

Executive Summary

The key objective of the **BioINSouth project is to support decision-makers in Mediterranean European regions to incorporate ecological limits into their regional bioeconomy strategies and roadmaps.** The project specifically targets regions that are currently lagging, with a focus on increasing regional competitiveness and innovation capacity. By fostering collaboration among stakeholders, including policymakers, SMEs, and civil society, inspired by the good practice of the BIOEAST Initiative as a good example of collaborative regional networks for exchanging experiences, knowledge, and best practices. This document is presenting D3.1 guidelines for the establishment and operation of BioINSouth HUBs (hereinafter referred as “HUB”) across the Mediterranean regions, i.e. methodological support to HUB coordinators, covering best practices for HUB management, stakeholder engagement, and communication strategies to inspire and involve a diverse group of stakeholders. The deliverable also emphasises the importance of utilising existing bioeconomy networks and adapting successful models from other regions to enhance the effectiveness of the HUBs explaining how to advance upon the activities of WP2. This deliverable aims to **lay the foundation for a well-coordinated and sustainable network of HUBs that will support the project's objectives in advancing the regional bioeconomy.**

Introduction

The BioINSouth project contributes to the CBE-JU Strategic Research and Innovation Agenda (SRIA) by developing guidelines and tools to enhance the sustainability and circularity of bio-based industries in Mediterranean European regions. This aligns with the CBE-JU's objectives of accelerating innovation, improving market deployment, and ensuring high environmental performance in bio-based industrial systems. The project specifically targets regions with lower innovation capacity, aiming to increase their competitiveness and foster inclusive growth, which supports CBE-JU's goal of balanced regional development and broader stakeholder engagement. Through these efforts, BioINSouth helps to advance the overarching aims of the CBE-JU partnership, contributing to a more sustainable and resilient European bioeconomy. In doing so, the BioINSouth project **contributes to the Widening Strategy by specifically targeting Mediterranean European regions with underdeveloped bio-based ecosystems**. The project enhances research and innovation capacities in these regions, aligning with the Widening Strategy's goal of increasing participation from underrepresented areas in EU bioeconomy initiatives. By fostering regional bioeconomy strategies, supporting local innovation, and engaging diverse stakeholders, BioINSouth directly addresses the objectives of the Widening Strategy, promoting more inclusive and equitable development across Europe.

BioINSouth project is establishing the new BioINSouth Initiative and creating a broader framework for cooperation to promote sustainable bioeconomy practices in Southern Europe. BioINSouth project is providing the basis to create actionable strategies and tools that could be implemented to ensure the operation of the **BioINSouth Initiative and implementing its goals of fostering innovation, sustainability, and inclusivity in the bioeconomy in Southern Europe. To ensure the successful operation of the BioINSouth Initiative and the effective implementation of the BioINSouth project, HUBs will be established.** These HUBs are- in a nutshell- acting as regional platforms that bring together diverse stakeholders, including policymakers, industry actors, and civil society, to collaborate on bioeconomy initiatives, facilitate the exchange of best practices, co-create action plans, and ensure the inclusion of local and regional perspectives in the development and implementation of bioeconomy strategies. Through these activities, HUBs support the overall goal of improving sustainability and circularity within the bioeconomy sector, contributing to the broader aims of the BioINSouth project.

1 The Role of HUBs in Bioeconomy

HUBs are **crucial for supporting the European Green Deal's objectives by acting as multi-actor platforms that promote the co-creation of disruptive tools and innovative solutions as they ensure that the transition to a bio-based economy is inclusive**, involving actors from academia, industry, and public authorities in the development and implementation of strategies that align with sustainability goals (Rowan and Casey, 2021). By providing a transparent and inclusive platform for dialogue, HUBs contribute to **building consensus among stakeholders, which is essential for the successful implementation of bioeconomy policies and initiatives** (Schiller & Voß, 2022) Regional bioeconomy HUB could be defined as a dynamic system of diverse, interconnected stakeholders, including innovative start-ups, small, medium, and large enterprises, research and knowledge dissemination organisations, nonprofit organisations (Sobol, 2022) as such HUBs are playing a pivotal role in advancing the bioeconomy by serving as dynamic platforms for collaboration, innovation, and knowledge exchange among a diverse range of stakeholders. **Bioeconomy HUBs could help overcome the barriers to commercial deployment of bio technologies by providing a collaborative environment where stakeholders could address obstacles across the innovation chain and facilitate the scaling of bio-based technologies and the commercialisation of sustainable products, which**

are essential for the growth of the bioeconomy (Piotrowski, Carus, and Carrez, 2022). If effectively managed, HUBs could enable stakeholders to explore future trends and co-create adaptive solutions. This forward-looking approach is critical in preparing regions to address emerging challenges in the bioeconomy, such as climate change and resource scarcity (Korhonen & Hujala, 2015).

In summary, bioeconomy HUBs are central to the development of the bioeconomy as enhancing the legitimacy and trust of sustainability governance, facilitating collaboration, driving innovation, and ensuring that bio-based strategies are sustainable, inclusive, and responsive to both local and global challenges.

2 HUB Case Examples

The importance of bioeconomy HUBs establishment is mirrored in the implementation of various EU projects as well as the operation of the BIOEAST Initiative. This chapter summarises the features of these HUBs.

2.1 National BIOEAST HUBs

The BIOEAST Initiative is a political initiative, and as such, only the ministerial bodies could become members. Therefore, the **BIOEAST Governance and Roadmap** defines the role of national BIOEAST HUBs (hereinafter referred as “BIOEAST HUB”) as a national network to gather stakeholders and support their engagement in bioeconomy that are creating a stakeholder group at the national level, support their engagement in the bioeconomy and in the topics discussed on the macro-regional (i.e. BIOEAST) level and also facilitate the communication with the BIOEAST National Contact Points (hereinafter referred as NCPs).

National BIOEAST HUBs shall establish National Thematic Working Groups (hereinafter referred as TWG) that align with the topics of the BIOEAST TWGs (top-down, to foster national dialogue about the agenda of the BIOEAST TWGs) and ensure that the priorities and perspectives reflect a collective agreement. National BIOEAST HUBs shall also assist in the formation of national TWGs that cater to the specific needs of their respective BIOEAST country (bottom-up, as visualised on the following picture).

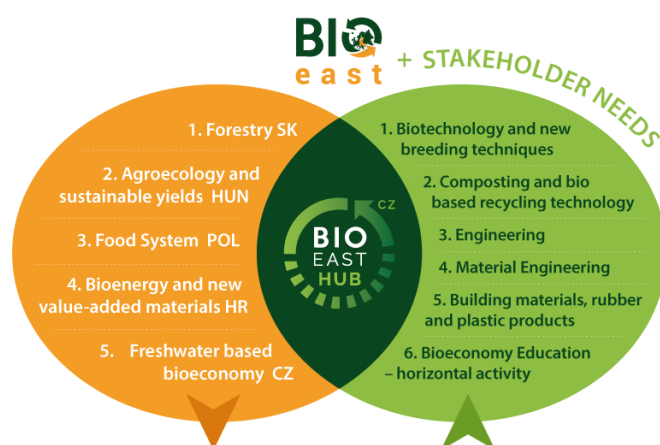


Figure 1 BIOEAST TWGs and National Stakeholders' Needs

National BIOEAST HUBs are fulfilling the following objectives:

1. **Enhance National Coordination and Collaboration:** Strengthen the role of National Contact Points (NCPs) by facilitating inter-ministerial discussions and connecting public administration across the BIOEAST countries to ensure cohesive bioeconomy policies and strategies.
2. **Support Strategic Research and Innovation Agendas:** Actively contribute to the development and implementation of the Strategic Research and Innovation Agendas (SRIA) by engaging in discussions with BIOEAST Thematic Working Groups (TWGs) and ensuring alignment with national priorities.
3. **Foster Evidence-Based Bioeconomy Strategies:** Assist in generating robust evidence and data to support the development of national bioeconomy strategies, ensuring that they are well-informed, actionable, and aligned with both national and EU-level bioeconomy goals.
4. **Facilitate Stakeholder Engagement and Knowledge Exchange:** Engage and mobilize a broad spectrum of national stakeholders from the private, public, research, and business sectors to actively participate in the bioeconomy, and facilitate the transfer of knowledge and best practices among them.
5. **Promote Effective Communication and Dissemination:** Ensure the effective dissemination of information from BIOEAST and EU initiatives to the national level, enhancing understanding and participation through collaboration with communication experts and national projects.

When comparing the aims and role of the bioeconomy HUBs described in Chapter 2 with the goals of the BIOEAST HUBs, the main difference is the close connection to the political initiative. This has of course its disadvantage as BIOEAST HUBs might be less flexible because of the need to consult strategic decisions with policy makers (who might struggle with time and therefore delays may occur). On the other hand, the involvement of policymakers lends BIOEAST HUBs recognition.

The first and fully operating national BIOEAST HUB was established in 2020 in the Czech Republic.

2.2 Bioeconomy HUBs as a result of EU projects

H2020 and Horizon Europe have supported projects that established bioeconomy HUBs in the EU. Numerous hubs exist across various projects, each with distinct roles and structures. For example, in the Rural Bio Up project, hubs primarily aim to help innovators scale up inclusive, small-scale bio-based solutions within rural areas by leveraging regional strengths, opportunities, and local feedstock. To support BioINSouth HUB coordinators, mapping of bioeconomy HUBs in Southern Europe was provided. The result of the mapping is summarized in the following Table.

Table 1 Bioeconomy HUBs established in the H2020 and Horizon Europe Projects in Southern EU

Country	BE HUB Coordinator	BE HUB Focus	Project
Greece	<u>Certh</u>	Supports people with disabilities, offering skills for bioeconomy jobs and fostering inclusion.	<u>BioLoc</u>
	<u>Region of Central Macedonia</u>	Development of a Bioeconomy Cluster in Central Macedonia with all actors.	<u>Robin¹</u>
	<u>Aristotle University of Thessaloniki</u>		
	<u>QPLAN</u>		
	<u>Centre for Research and Technology – Hellas (CERTH)</u>	South-East EU value chain (based in Greece, Staramaki) makes eco-friendly straws from wheat by-products, promoting local jobs and contributing to the circular economy.	<u>BioRural</u>
	<u>Innovative Circular Open (InCommOn)</u>		
	<u>Foodscale Hub (FSH)</u>		
	<u>Clube</u>	The Greek national Hub will support the drafting of the national bioeconomy roadmap and will promote best practices in the sector. It also plans to develop a communication plan and transform into a non-profit association for the promotion of bioeconomy.	<u>Cee2act</u>
Italy	<u>MedINA</u>	North Aegean, Greece's poorest region, aims to enhance CBE opportunities through cross-sector collaboration.	<u>RIBES</u>
	<u>Vanguard Initiative Bioeconomy Pilot</u>	Unlock full potential of local available biomass (including waste) by creating new business opportunities and collaborations/partnerships between the different actors of the value chains targeting sectors like pharma, textiles, construction, and chemicals.	<u>Ruralbioup</u>

¹ The ROBIN Project will focus on implementing the preliminary work needed as preparation to establishing Bioeconomy HUBs in the future.

	<u>Italian Biomass Association (ITABIA)</u>	Evaluating value chains, gathering local company needs with a bottom-up approach.	
	<u>SPRING</u>	It aims to develop supply chains in areas such as industrial hemp, organic fertilizers from the circular economy, and innovative uses of residual biomasses, with two final supply chains selected through stakeholder collaboration.	
	<u>SPRING</u>	Enhances knowledge and networking for agro-forestry workers and livestock farmers.	<u>BioLoc</u>
	<u>SPRING</u>	Campania faces social challenges due to organized crime. RIBES focuses on rural revitalization through social enterprises in CBE.	<u>RIBES</u>
	<u>UNIPA</u>	This regional innovation ecosystem focuses on blue bioeconomy, promoting local production of marine biobased products and recovering by-products from fish processing to support a circular economy.	<u>Engage4BIO</u>
Portugal	<u>University of Coimbra</u>	South-West EU value chain (based in Coimbra Portugal) SCIVEN company provides equipment to convert forest debris into heat and electricity, preventing fires and supporting bioenergy.	<u>BioRural</u>
	<u>CENTRO DA BIOMASSA PARA A ENERGIA</u>		
Spain	<u>CIRCE</u>	Empowers women over 40 years old in rural areas with limited education to engage in the bioeconomy.	<u>BioLoc</u>
	<u>CAPADR</u>	Strengthening regional tools and plans for the promotion and dissemination of the circular bioeconomy in Andalusia. Challenges to the potential creation of a circular bioeconomy node in the agrifood value chain.	<u>Robin</u>
	<u>IFAPA</u>		
	<u>CTA</u>		
	<u>ASOCIACION ESPANOLA DE LA VALORIZACION ENERGETICA DE LA BIOMASA</u>	South-West EU value chain (based Pozo Alcón, Spain) Aceites Guadalentin olive oil mill gasifies olive pomace to transform waste into bioenergy, part of a circular bioeconomy initiative.	<u>BioRural</u>
	<u>INNVI</u>	The Ebro Valley recognizes bioeconomy benefits but lacks stakeholder connectivity. MIPs will enhance regional development through networking and business support.	<u>MainstreamBio</u>

Note: The BioRural project will establish 4 Regional Bioeconomy Platforms (HUBs), dividing Europe into four macro-regions: South-West, South-East, North-East, and North-West. Each of these hubs, in turn, will contribute to the creation of a Pan-European Rural Bioeconomy Network. The hubs are not confined to any specific country but instead represent good practices within their respective regions.

2.3 Key Takeaways for BioINSouth HUBs

Bioeconomy HUBs established in Southern Europe in the EU projects are **driving regional growth by supporting diverse communities, enhancing cross-sector collaborations, and creating innovative business opportunities**. Below is a summary of their key activities and good practices that outline the bioeconomy HUBs' strategic approach to advancing the bioeconomy across various sectors.

- **Networking and business support** - bioeconomy HUBs are establishing regional networks unites various actors in the bioeconomy value chain, fostering collaboration and industry growth, bioeconomy HUBs, improve stakeholder connectivity in regions that lack integration within the bioeconomy, with a focus on enhancing regional development through support for market actors and initiatives. BioINSouth HUBs might take the advantage of the already established networks mentioned in **Table 1** above, to facilitate efficient resource sharing, knowledge exchange, and co-innovation spaces.
 - Collaboration models - BioINSouth HUBs could use various collaboration models, including public-private partnerships, co-development platforms, and virtual collaboration spaces. These models enable stakeholders—from research institutions to SMEs—to work jointly on innovative bio-based projects and research, sharing infrastructure, expertise, and data to reduce costs and increase impact. For instance, a co-innovation model may allow smaller businesses access to larger firms' advanced equipment or labs, accelerating technology adoption and product development within the bioeconomy sector.
 - Shared resource access – BioINSouth HUBs could play a crucial role in providing access to shared resources, such as pilot plants, testing facilities, and data platforms. This access supports SMEs, start-ups, and academic institutions that may lack the capital for dedicated resources, enabling them to trial and refine bio-based innovations cost-effectively.
 - Case examples of successful integration - successful integration within BioINSouth HUBs could have a cooperative model for local bio-based businesses to access shared forestry and agricultural resources, where regional agricultural producers collaborate with biotechnologists to convert agricultural waste into bio-based products, creating new revenue streams and contributing to a circular economy.
- **Enhancement of innovators** - bioeconomy HUBs are supporting innovative companies (e.g. productions straws from wheat by-products, utilization of forest debris and olive pomace, to produce heat), supporting local jobs and promoting circular bioeconomy.
- **Unlocking biomass potential** - creating a network, connecting players along value chains enables new business opportunities and utilizing local biomass, including waste, targeting industries like pharmaceuticals, textiles, construction, and chemicals.
- **Evaluating and developing new value chains:** using a bottom-up approach, bioeconomy HUBs assess local company needs to create new supply chains in areas like industrial hemp, organic fertilizers, and innovative uses of residual biomasses.
- **Enhancing knowledge, skills, and inclusion:** bioeconomy HUBs are enabling training to increase participation in bioeconomy sectors, providing support for people with disabilities and offer skill development in bioeconomy jobs, fostering inclusion and employability.
- **Policy Support** bioeconomy HUBs participate in drafting bioeconomy related strategies and roadmaps and promoting best practices for the bioeconomy sector.

Bioeconomy HUBs' efforts focus on inclusivity, capacity building, policy support, and the circular economy to unlock the full potential of local resources and drive socio-economic development **in line with the regional priorities**.

BioINSouth HUBs could get inspiration in the above-mentioned activities that would be planned in line with the current situation of the respective region.

2.4 Status Quo of the BioINSouth Region

The BioINSouth region is facing the following challenges: drought, fires, unexploited biomass from olive oil, orange, grape production and a brain drain. A bioeconomy HUB could implement several key activities to address these issues:

1. Biomass valorisation for circular bioeconomy - a bioeconomy HUB could facilitate the transformation of biomass like industrial, forest, or agricultural waste (e.g., olive pomace, orange peels, grape skins) into bioenergy, biofuels, or bioproducts, i.e. utilizing olive pomace for bioenergy production not only reduces waste but also provides a sustainable energy source, helping to prevent forest fires by reducing leftover dry biomass. Bioeconomy HUB could support local businesses to create value-added products such as animal feed, bio-fertilizers, or biodegradable packaging from agricultural by-products.
2. Combating drought and fires through sustainable land use implementing the holistic water- soil-climate nexus: bioeconomy HUBs could establish a cooperation with other bioeconomy HUBs and networks of this kind from other regions (e.g. good practice from the Mission Ocean, i.e. Danube Lighthouse) transfer good practice implements best practices in soil and water management, community planning to improve soil health and water retention. In addition to this, bioeconomy HUBs could introduce activities to collect and clear biomass residues from orchards and vineyards to prevent fires; these activities may inspire innovation described in the previous point.
3. Addressing brain drain by training, supporting community-based activities and enhancing new opportunities. Bioeconomy HUB could organize training programs and capacity-building workshops on bioeconomy practices for local youth and graduates preferably with a support of regional policy makers, association of employers (business chamber or any network of its kind) to support employment in innovative bio-based sectors, bioeconomy start-ups focusing on value-added agricultural products, sustainable land use technologies, or biomass conversion processes. These activities could encourage citizens to stay and work in the region.

In a nutshell, bioeconomy HUB could bring together farmers, researchers, SMEs, and local policymakers to co-create strategies for sustainable land management and resource utilization. By sharing successful regional case studies, such as converting agricultural waste into bioenergy or creating profitable bioproducts, the HUB could inspire community involvement and investment in bioeconomy solutions. This strategic approach integrates biomass utilization, sustainable agricultural practices, skills development, and community engagement to address environmental challenges while creating socio-economic opportunities and combating the region's brain drain.

Of course, the above text is describing general principles reflecting the main drivers for an effective operation of the BioINSouth HUB. It is beyond any doubt that each HUB will definitely have a more “personalized” profile based on two parameters: 1/ The regional particularities and 2/ the sectorial dynamics.

In the regional perspective, elements such as the socioeconomic priorities, the level of adoption of Bioeconomy practices, the involvement and participation of the public administration, the perceptions of the involved actors, the engagement of the stakeholders, the regulatory frame, but also more subjective elements such the local attitudes, lobbying, and business priorities have to be considered by each

respective BioINSouth HUB coordination and accordingly to enhance and/or adapt the operational practicalities.

Regarding the sectorial dynamics, it is often observed that in a region a particular sector is predominant and therefore affects the local practices, needs, and priorities. In such case each coordinator will have to decide whether to orientate the hub to the main sector which have the more significant impact for the community and the region or try to balance a wide spectrum of sectors within the Hub in a beneficial way. The BioINSouth project is unlike the **above-mentioned projects financed by the CBE- JU** and therefore by the BIC. **The connection to the industry players is ever more obvious.** The BioINSouth HUBs should operate as **catalysts for industry transformation, providing the necessary support to improve market deployment and environmental performance in bio-based systems.** Given that the BioINSouth project specifically targets regions with lower innovation capacity, the BioINSouth HUBs play a vital role in fostering industry competitiveness and supporting inclusive growth, aligning with the CBE-JU's goals of balanced regional development, and engaging a broader range of stakeholders.

BioINSouth HUBs are designed to support the BioINSouth Initiative. The initiative is envisaged to support decision-makers in Southern European regions to incorporate ecological sustainability into their bioeconomy strategies and roadmaps, to enhance regional competitiveness, foster innovation capacity, and contribute to the EU's fair and green transition, therefore **beyond the project lifetime.** Therefore, from the very beginning BioINSouth HUB coordinators should plan in a horizon longer than 3 years.

For more details about the Bioeconomy sector in the regions of the BioINSouth Hubs, see **Annex 1.**

3 BioINSouth HUBs in the BioINSouth Project

Defining a common objective requires aligning diverse stakeholder interests with the overarching goals of each BioINSouth HUB. Begin by engaging stakeholders through workshops, surveys, or interviews to gather insights into their priorities, challenges, and expectations. The objective should be formulated using the SMART framework—specific, measurable, achievable, relevant, and time-bound. For instance, rather than broadly stating “enhance bioeconomy practices” a specific objective might be “increase regional adoption of sustainable agricultural practices by 20% within three years”. Naturally, the objectives need to comply with regional potential and address the challenges individual BioINSouth HUB members are facing.

The BioINSouth HUB objectives should also align with broader frameworks, such as the EU Green Deal or regional/ national bioeconomy strategies, to ensure it contributes to global sustainability goals. It is equally important to establish an iterative review process, allowing the objective to be refined based on new data or evolving stakeholder input. This approach ensures clarity, relevance, and adaptability, fostering a shared sense of purpose among all BioINSouth HUB members.

3.1 BioINSouth HUB Name

The rationale for naming the HUBs established under the BioINSouth project as "BioINSouth HUB" and name of the region (e.g. BioINSouth HUB Andalusia) is to explicitly highlight their connection to the BioINSouth Initiative. This naming **emphasizes the collaborative and strategic link between the regional HUBs and the larger BioINSouth Initiative.** By adopting this name, the BioINSouth HUBs could **benefit from the recognition and established framework of BioINSouth, fostering stronger brand identity, regional**

alignment, and stakeholder engagement. Additionally, it aligns with the project's goal of developing a network of regional bioeconomy HUBs that work collaboratively within a macro-regional context, promoting knowledge transfer, innovation, and sustainable practices across Southern Europe.

3.2 Mission and Vision of the BioINSouth HUBs

A well-crafted vision and mission are pivotal for setting the strategic direction of any BioINSouth HUB. The vision should articulate an aspirational future state, while the mission should define the steps required to achieve it. To ensure inclusivity, begin by identifying core values—such as sustainability, innovation, or equity—that resonate with BioINSouth HUB stakeholders and MARGs. The vision should emphasize long-term impacts. For example: “To establish BioINSouth HUB as a leader in sustainable bioeconomy practices by fostering innovation and collaboration.” The mission, on the other hand, should focus on actionable steps, e.g.: “Our mission is to unite stakeholders across academia, industry, and policymaking to develop scalable, sustainable bioeconomy solutions.”

By embedding these statements into the initiative’s identity, they not only provide direction but also inspire and mobilize stakeholders toward common goals.

It is imperative for all BioINSouth HUBs to have a clear idea of the mission and vision of their HUB beyond the projects’ description, to start building on the identity of the BioINSouth HUB. Even though it is understandable by all partners that the BioINSouth HUBs will have to adapt based on the information that is continuously gathered as well as the interests of their stakeholders, the BioINSouth HUB coordinators were asked to partake in an exercise aiming to put to writing their point of view of their BioINSouth HUBs’ identities at this starting stage of their life. The results are summarised in **Annex 2**.

3.3 BioINSouth HUBs Governance

The **BioINSouth HUBs** are expected to begin operations without establishing a formal legal entity, which could be considered at a later stage. Initially, efforts are recommended to focus on **capacity building and networking** rather than legal formalities. Participating members could sign a simple **Memorandum of Cooperation** to solidify their commitment to shared objectives and collaborative activities (the example of the BIOEAST HUB CR Memorandum of Understanding is provided in the Annex 3 to draw inspiration from). To ensure effective governance and inclusive representation, each Multi-Actor Regional Group (MARG)—if not yet included during the BioINSouth HUBs’ initial establishment, then in its subsequent expansion phase— have to include at least one representative from each organization constituting the BioINSouth HUB. Only the representatives of these organizations will have one equal vote each to make decisions regarding the BioINSouth HUB. The MARG as a whole will continue its role of providing unbiased consultancy, offering expertise and guidance to enhance the BioINSouth HUB’s impact and ensure alignment with broader regional bioeconomy goals.

At a more advanced stage of the BioINSouth HUB's activities, it might be reasonable to establish an Executive Committee (EC) composed of representatives from the member organizations, serving as the governance body of the BioINSouth HUB and operating separately from the activities of the MARG. During the HUB’s lifecycle, the MARG could transition to serving exclusively as a scientific advisory body (see 3.3.1). The decision regarding this transition, including its timing, remains entirely at the discretion of each regional BioINSouth HUB.

Creating a legal entity is not mandatory nor a formal requirement. However, considering that the goal is for the BioINSouth HUBs to remain active and operating under the BioINSouth Initiative for far longer than the duration of the BioINSouth Project, the creation of a legal entity for the BioINSouth HUB may be the optimal future solution to many administrative and managerial issues.

3.3.1 BioINSouth HUBs and MARGs

The BioINSouth WP2 Multi-Actor Regional Groups (hereinafter referred as “MARG”) are playing a vital role in serving the HUBs by creating a collaborative environment that brings together diverse stakeholders from various sectors. These groups facilitate the exchange of knowledge, best practices, and innovative solutions within the regional bioeconomy. **By engaging multiple actors, the WP2 groups help to align regional activities with the broader objectives of the BioINSouth project, ensuring that HUBs could effectively contribute to the development of sustainable bioeconomy strategies.** Additionally, they support the HUBs in strengthening regional and national bioeconomy networks, fostering a more integrated and inclusive approach to bioeconomy development across the Mediterranean regions.

The **MARGs** serve as the **Advisory Board for BioINSouth HUBs**, guiding the BioINSouth HUBs in achieving impactful and regionally relevant bioeconomy initiatives and creating a collaborative environment, uniting stakeholders across sectors to drive sustainable bioeconomy development.

Roles of the Advisory Board (MARG):

- **Advisory Role:** Provides strategic guidance and expert insights to BioINSouth HUBs, ensuring alignment with regional bioeconomy goals.
- **Knowledge Exchange:** Facilitates the sharing of knowledge, best practices, and innovations within the regional bioeconomy.
- **Alignment:** Helps align regional activities with BioINSouth’s broader project objectives, enhancing relevance and impact.
- **Network Strengthening:** Supports the HUBs in building and strengthening regional and national bioeconomy networks.
- **Inclusivity:** Fosters an integrated approach that includes diverse regional voices for more comprehensive bioeconomy development.
- **Capacity Building:** Aids in equipping HUBs with the resources and support necessary to implement sustainable bioeconomy strategies across the Mediterranean regions.

The Terms of Reference for the MARGs were produced by BioINSouth Work Package 2 and detail the expectations and responsibilities of a MARG member as well as the benefits they are to claim.

As mentioned above, they are to have a supporting and consulting role to the BioINSouth HUBs they correspond to. To fulfil this role, the MARGs will be invited to participate in semi-structured interviews to advance the BioINSouth HUBs’ knowledge building for their region, forums for capacity building and best practice exchanges, co-creation sessions focusing on the regional case study on bioeconomy and the operation and performance of the BioINSouth HUBs’ action plans, and any other interaction that could be organised based on the HUBs needs and the MARGs availabilities.

The members of the MARGs are joining the BioINSouth activities voluntarily and therefore have the right to withdraw participation and request the deletion of any data linked to them by notifying their BioINSouth representative. Anonymous data produced during their participation will continue to be used by the BioINSouth HUBs.

3.4 The Moment of BioINSouth HUB Establishment

In the BioINSouth Project, a HUB is considered established when a coordinating entity, such as a ministry, university, or research organization, successfully brings together a network of diverse stakeholders, including those from the public, private, research, and business sectors. **The establishment of the HUB is marked by organizing one/ several kick off meetings and creating a network of 15- 30 stakeholders).** Consequently, the formation of this network, the initiation of communication efforts such as launching national web pages, and the start of activities that align with the strategic goals of the bioeconomy also mark the establishment of the HUB.

3.5 Proposed Agenda and Scenario for the BioINSouth HUBs' Kick-off Meetings

Considering the challenges in gathering key regional stakeholders, the BioINSouth Kick-off Meeting (KoM) could be scheduled alongside a relevant event or held online. The first contact with the relevant stakeholders and their invite to the BioINSouth HUB Kick-off Meeting is of significant importance. A sample of an email invitation is included in **Annex 4** for the BioINSouth HUB Coordinators' reference and inspiration. While there is flexibility in timing, ensure enough time to thoroughly address the following key objectives with respecting the unique situation of your HUB (e.g. already established, building a new structure). The following points represent a rather general proposal:

1. Meet and Greet

It is important to choose the appropriate method for introductions, particularly if participants are unfamiliar with one another. The focus should be on creating a comfortable environment that encourages participants to engage.

2. Introduction to the BioINSouth Project

As the BioINSouth HUB Coordinator, you will provide a brief overview of the project, including the HUB's role, its stakeholders, and the co-creation strategy that guides it.

3. Clustering and Collaboration Potential

Structure this session as an interactive discussion, actively engaging stakeholders. The following suggestions could guide the conversation and foster collaboration:

- **Communicate the BioINSouth HUB's Value Proposition:** Clearly outline the benefits of BioINSouth HUBs, while encouraging participants to express their needs, challenges, and expectations. Discuss the BioINSouth HUB's mission, key areas of focus with stakeholders as this will allow aligning the mission and key area with stakeholders' priorities.
- **Facilitate Networking Opportunities:** Organize short breakout sessions / meetings in smaller group / long coffee breaks where participants could discuss specific challenges or areas of interest. This could encourage stakeholders to connect with others facing similar issues or working in related fields, thus fostering immediate partnerships.
- **Collaboration Mapping Exercise:** Use visual tools such as mind maps or digital platforms to identify synergies between participants' existing projects and the BioINSouth HUB's objectives. This could help pinpoint opportunities for collaboration based on shared goals or complementary resources.
- **Idea Generation Sessions:** Organize brainstorming or roundtable discussions where stakeholders could propose innovative projects or initiatives that align with the BioINSouth HUB's goals. This helps to cultivate a pipeline of ideas for future collaboration.

- **Panel Discussions or Case Studies:** Present case studies or invite stakeholders with successful bioeconomy collaborations to share their experiences. This could provide concrete examples and lessons that others could learn from, apply to their own initiatives, and boost collaboration.
- **Resource and Expertise Sharing:** Encourage participants to share specific resources, expertise, or services that could be valuable to other stakeholders. This will enhance the collaborative culture and allow participants to see the tangible benefits of being part of the BioINSouth HUB network.
- **Create a Communication Platform:** Introduce or demonstrate a communication platform (such as an online shared workspace, LinkedIn network) where stakeholders could continue to interact, share resources, and monitor the progress of joint initiatives after the KoM.

3.6 Activities and Actions for BioINSouth HUBs in the First Year

In the initial year, BioINSouth HUBs should **focus on establishing a solid foundation for bioeconomy collaboration, stakeholder engagement, and strategic planning**. Beside the activities organised in the BioINSouth project, BioINSouth Coordinators might utilize activities organised in other EU projects that are enhancing the establishment of bioeconomy HUBs, please refer to **Table 1**.

Some actions for your inspiration:

- **Mapping and Needs Assessment** conduct a systematic mapping of existing bioeconomy strategies and level of implementation, activities, value chains, and educational programs in each region. This will identify current strengths, gaps, and collaboration opportunities across sectors (good example could bring the BIOLOC project, very extensive mapping was provided by CIRCE)
- **Awareness-Raising Campaigns** Organise awareness campaigns on the potential of bioeconomy for regional development. Target both the public and specific sectors to build understanding and buy-in for the BioINSouth HUB's initiative. The members of the respective BioINSouth Hubs might plan some events that the BioINSouth Coordinators might use – i.e. to cooperate on the organisation or have a brief presentation about the BioINSouth HUB.
- **Knowledge Exchange and Capacity-Building** Offer training sessions and workshops focused on bioeconomy fundamentals, sustainable entrepreneurship, and sector-specific skills. Pilot case studies could be used as practical learning tools for stakeholders, including SMEs and educational institutions, there are a lot of trainings being offered in various EU projects (e.g. the RuralBioUp project is offering a wide spectrum of trainings, likewise with CBE-JU project BRILIANT).

The BioINSouth HUBs are tasked with creating action plans that reflect stakeholders' needs and align with regional bioeconomy goals. BioINSouth HUBs are expected to actively engage in co-creation workshops and peer exchanges to refine their strategies. The final Action Plans, detailed in D3.3 due by M15, should set a clear path for advancing bioeconomy integration, defining tasks and objectives for ongoing development and replication efforts. **Regular updates and alignment with the project's overarching strategic priorities are essential** to meeting these objectives and fostering sustainable outcomes for regional bioeconomy growth.

3.6.1 Milestones and Timeline

The first year should be carefully planned with clear milestones to track progress, build support, and establish the BioINSouth HUB's presence. The following set of Milestones are indicative and should inspire BioINSouth Coordinators that do not have much experience.

Quarters 1–2

- Milestone: Conduct the kick-off event and establish Multi-Actor Regional Groups (MARGs) (M2 of BioINSouth Project)
- Activities: Host introductory meetings, conduct initial stakeholder mapping, and launch public awareness campaigns (see Chapter 3.5 for more information). Finalise the BioINSouth HUB's mission and primary areas of focus and secure a Memorandum of Understanding (MoU) with core members (please refer to Subchapter 3.2).

Quarter 3

- Milestone: Advance the regional mapping and needs assessment report.
- Activities: Begin knowledge-sharing sessions, initiate regular MARG meetings, and develop pilot case studies to explore regional bioeconomy opportunities. Strengthen partnerships with universities, regional councils, industry leaders and civil society. Additionally, explore potential funding sources, including national, ESF, or ERDF funding, and conduct a preliminary analysis of requirements for securing these funding.

Quarter 4

- Milestone: Draft a preliminary action plan for the following year.
- Activities: Review progress with stakeholders, identify best practices, and refine strategic plans for the future. Evaluate the feasibility of establishing the HUB as a formal entity based on regional needs and stakeholder commitment.

This timeline offers a structured approach for BioINSouth HUB Coordinators to guide development and establish a solid foundation for long-term success.

3.7 Dynamization of the BioINSouth HUBs within the Project

Stakeholder engagement is imperative for the accomplishment of BioINSouth activities that are envisioned in the project description. The means of engagement will be affected by the stakeholder audience and goal of each activity and determined by the BioINSouth HUBs based on their experience with their stakeholders and knowledge of the regional dynamics. For the duration of the project, some BioINSouth HUB activities are determined through the project's milestones and deliverables (see **Annex 5**).

In addition to the milestones, the project's KPIs also dictate some of the Hub's activities and the results that should be achieved by the BioINSouth HUBs, while the project is running. Table 2 below describes

the KPIs that are to be kept by the BioINSouth HUBs both in relation to the project objectives and their individual activities.

Table 2 Project KPIs related to BioINSouth activities for the duration of the project

KPIs for the BioINSouth HUBs	Related deliverable/ WP	Target	Goals
Support understanding of sustainability challenges and opportunities/benefits of circular bio-based solutions in eight regions-creation of the BioINSouth HUBs	D5.1	Total of 200 stakeholders (15-30 per BioINSouth HUB)	<ul style="list-style-type: none"> - Engage stakeholders, like market operators and civil society, to support the analysis of sustainability challenges and opportunities/benefits at regional HUBs level. - Ensure inclusive engagement of stakeholders by offering business opportunities to them, sharing capacities and knowledge, inspiration for innovation and for new national projects, information about bioeconomy and case studies, support in facilitating public consultation and advisory service.
Replicate the implementation of monitoring systems and assessment of the environmental impacts and circularity of bio-based systems	D4.3, D4.4, D4.5, D6.2	7 regions Emilia Romagna and Veneto (Italy), Extremadura (Spain), Zilina Region (Slovakia), Northern Region (Ireland), Southern Region (Portugal) and Central Macedonia (Greece)	<ul style="list-style-type: none"> - contribute to the EC's Knowledge Centre for Bioeconomy. - expand the implementation of monitoring systems, assessment of the environmental impacts and circularity of bio-based systems to other Countries. - favour the creation of a single EU bio-based market and international trade.

D3.1 HUB Guidelines

Validate sustainability and circularity screening methodologies and tools at a BioINSouth regional HUB level	D4.3, D4.4, D4.5, D6.2	>100 regional policy makers and public authorities	<ul style="list-style-type: none"> - improve understanding and awareness by the regional and local stakeholders including at the authorities' level of sustainability and circularity screening methodologies. - support higher innovation capacity and inclusion of such methodologies into the regional bioeconomy strategies and action plans. - promote the uptake of BioINSouth results.
Monitor and Optimise Bio-Based Activities		Account for >60% of the Total Bio-based Sector GDP in at regional HUBs level.	<ul style="list-style-type: none"> - alignment with EU Biodiversity Strategy, EU Adaptation Strategy, and the EU's LULUCF objectives. - actively assist decision-makers in identifying win-win solutions that generate economic gains. - preserve the environment and enhance resilience. - maximise the positive impact of bio-based activities across multiple EU targets.
Increase the awareness and capacity of national and regional research support agencies for industrial bio-based systems		>50 Regional research support agencies to be contacted	<ul style="list-style-type: none"> - involve research agencies in the activities of regional HUBs for direct engagement. - involve research agencies in DCE and replication activities.

3.8 Stakeholder Engagement Tips

Identifying stakeholders and their roles is crucial to building a collaborative ecosystem. Start by mapping the landscape of relevant actors, including policymakers, academia, small and medium enterprises (SMEs), large industry players, NGOs, and local communities. Using tools like the Power-Interest Grid, classify stakeholders based on their influence and level of interest in the BioINSouth HUB. This analysis helps to define roles, such as decision-makers, advisors, implementers, or beneficiaries.

For practical outreach, established networks like BIOEAST HUBs, regional chambers of commerce, or EU bioeconomy projects could serve as invaluable resources. Conducting stakeholder mapping through desk research, regional events, or partnerships could further refine this process. Regular engagement and feedback loops—such as surveys or focus groups—help ensure roles remain relevant and aligned with the BioINSouth HUBs.

Successful stakeholder engagement is essential for the BioINSouth HUBs to build lasting networks and support for bioeconomy initiatives:

- **Identify Key Stakeholders:** Target stakeholders across academia, industry, policy, civil society, and public administration. Emphasise the importance of cross-sectoral involvement to address bioeconomy needs holistically. Partner with existing clusters, councils, or networks, such as energy or agriculture clusters, to expand the HUB's reach and credibility. Using established networks could improve buy-in and accelerate collaboration. BioINSouth HUB Coordinators might start with desk research. For example, regional events organised by the local business chamber or agriculture chamber are a useful source of contacts and are also recommended as BioINSouth members as they have already established network to bring on board (the practice of BIOEAST HUB CR).
- **Establish a Feedback Loop:** Regularly solicit feedback from stakeholders to refine HUB activities. This could be done through periodic surveys, MARG meetings, or targeted outreach efforts.
- **Engage SMEs and Startups:** Provide tailored sessions for small enterprises, offering them resources, connections, and potential funding pathways to help transition into the bioeconomy sector. There are several CBE-JU projects that is looking for primary producers to invite them to Advisory Board or Board of this type. BioINSouth Coordinators might use this opportunity (e.g. BRILIANT project).

Maximizing the impacts of a BioINSouth HUB requires targeted efforts in visibility, capacity building, innovation scaling, and collaborative networking. Enhancing visibility could be achieved through regional forums, international conferences, and digital outreach to highlight successes and engage wider audiences. Capacity building through workshops, training programs, and skill development initiatives helps empower stakeholders to take active roles in the BioINSouth HUB.

Scaling successful innovations across regions and sectors ensures replicability and amplifies their impact. Creating toolkits or best-practice guidelines based on pilot successes could support broader adoption. Collaborative networks play a critical role in driving impact by connecting stakeholders across value chains and geographies, fostering shared learning, and pooling resources.

Finally, establishing and tracking impact metrics is essential. These metrics—such as stakeholder engagement rates, policy adoption, or regional innovation uptake—enable the BioINSouth HUB to measure and communicate its progress.

To maintain active stakeholder involvement, BioINSouth HUBs could implement several effective **engagement techniques**:

- **Regular Follow-Up Events:** Hosting periodic events such as roundtable discussions, webinars, and progress updates helps reinforce stakeholders' connection to the BioINSouth HUB. These sessions could highlight recent BioINSouth HUB achievements, share success stories, and highlight upcoming opportunities, keeping stakeholders informed and invested in ongoing developments.
- **Personalized Outreach:** Tailoring communication to each stakeholder group increases relevance and engagement. This might include customized newsletters, direct emails detailing specific benefits and projects, or one-on-one meetings to address unique interests. **Personalized outreach ensures that each stakeholder feels their needs are understood and valued.**
- **Updates on BioINSouth HUB Benefits:** Periodic summaries and reports on HUB achievements, growth metrics, and contributions to regional bioeconomy goals keep stakeholders aware of the BioINSouth HUB's impact. Highlighting benefits, such as expanded networks, resource access, and policy influence, reinforces the value of engagement.
- **Workshops and Co-Creative Opportunities:** Creating collaborative workshops where stakeholders could directly influence HUB projects or brainstorm new initiatives helps build a sense of shared ownership. These interactive settings allow participants to contribute ideas, foster innovation, and see their input reflected in actionable plans, enhancing the long-term stakeholder commitment to BioINSouth HUB objectives.

4 Follow- Ups on the Deliverable

Annex 6 will detail the contributions made by various project partners during the development of the present guidelines, as part of an internal review process aimed at ensuring comprehensive and collaborative input from all stakeholders.

The Final Version of the Guidelines is planned to be presented in D3.2. The deliverable will come after the establishment and subsequent Kick-off Meetings of the MARGs (M6) and the BioINSouth HUBs (one or several meetings, depending on the needs of the region/case). D3.2 will include any findings regarding the effect that the differences of the BioINSouth regions had on the starting activities of the HUBs, along with any notable experiences derived from the HUB Coordinators, as well as any added information derived from the MARG Kick-Off meetings.

Through that feedback, the updated version of the guidelines will address the different activities and stakeholder engagement practices followed by the BioINSouth HUBs, based on their success and effectiveness due to the particularities of each region and the differences in stakeholders, as well as provide a more extensive view of the bioeconomy reality of the regions based on the information gathered by the MARGs and stakeholders during the aforementioned meetings.

The final Guidelines (D3.2) will be followed by an Action Plan (D3.3) for the BioINSouth hubs, focusing on a co-creative approach with the HUB stakeholders reflecting their needs and common goals with the HUB, and the tasks to be implemented to reach them.

5 Operational Flowchart for BioINSouth HUB Coordinators

The following flowchart provides a step-by-step guide, ensuring HUB Coordinators can navigate the process systematically while aligning with the BioINSouth Project's overarching goals. The flowchart it has to be intended as a guideline for each HUB coordinator (consider what reported in **3.6.1 Milestones and Timeline**):

STEP 1. Initial Stakeholder Mapping and Engagement (see also Chapter 3.6)

- Conduct a systematic mapping of regional stakeholders across academia, industry, public administration, and civil society.
- Organize preliminary meetings or surveys to identify key actors, their needs, and expectations.
- Establish communication channels for ongoing dialogue (e.g., mailing lists, collaborative platforms).

STEP 2. Formation of Multi-Actor Regional Groups (MARGs) (see also Chapter 3.3.1)

- Invite qualified stakeholders to participate in the MARGs, ensuring diversity and representation.
- Include in the MARG at least one representative from each founding organization of the HUB. Each representative should have equal voting rights for decision-making. In future, it could be useful to establish a dedicated Executive Committee.
- Formalize participation through a Memorandum of Understanding (MoU) or equivalent document.
- Organise a MARG Kick-off Meeting (KoM), either online or in-person.

STEP 3. HUB's Kick-off Meeting Organization (see also Chapter 3.5)

- Schedule and organize a Kick-off Meeting (KoM), either online or in-person, ensuring wide stakeholder participation.
- Facilitate interactive sessions for networking, collaboration mapping, ideas generation and aligning national and regional strategies.

STEP 4. Implementation of Co-Creation Sessions and detailed Action Plan (see also Chapter 3.8)

- Organize regular brainstorming and workshop events with stakeholders to refine the HUB's and initiatives.
- Ensure the inclusion of feedback from stakeholders in all strategic decisions.
- Develop a detailed action plan (D3.3) reflecting the HUB's goals, stakeholder needs, and regional bioeconomy objectives.

STEP 5. Monitoring and Documentation (see also Chapter 3.7)

- Define the expected impact on science, society and market.

- Establish KPIs to measure the impact and progress of the HUB's activities (e.g., stakeholder engagement rates, project outcomes).
- Document best practices, lessons learned, and stakeholder feedback.

STEP 6. Strategic Planning for Post-Project Sustainability (see also Chapter 3.3)

- Begin drafting a strategic plan for the HUB's sustainability beyond the project timeline.
- Explore funding opportunities and partnerships for long-term operational support.
- Evaluate the feasibility of formalizing the HUB as a legal entity, if needed.

STEP 7. Updating Guidelines (see also Chapter 4)

- Provide inputs for the updated version of the guidelines (D3.2) based on the initial experiences and challenges faced during the first year.
- Collaborate with other HUB Coordinators to share insights and align strategies.

STEP 8. Preparation of Action Plans

- Realize (each December) an annual activity report and define following Annual Work Programme or Annual Action Plan.

BioINSouth Info Box

The BioINSouth project aims to support decision-makers to incorporate considerations of ecological limits into their regional bioeconomy strategies and roadmaps relevant to circular bio-based activities. We aim to develop guidelines and digital tools, considering the safe and sustainable by design (SSbD) assessment framework, to support the adoption of innovative methodologies to assess environmental impacts in multiple industrial bio-based systems, increasing regional competitiveness and innovation capacity, and contributing to the EU fair & green transition.

Find out more:

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