

Strategic roadmap for a successful bioeconomy hub in Campania, Italy



Empowering communities - A Hub for revitalizing rural areas in Campania



Overview

Purpose and vision

The mission of the BIOLOC HUB in Campania is to revitalize local communities through bio-based innovation, promoting the adoption of a circular bioeconomy. By engaging regional stakeholders from the agroforestry and dairy sectors, the hub aims to strengthen local value chains in the region's internal areas, improving the quality of life and encouraging young people to stay in these areas. Through dialogue, knowledge exchange, and collaboration with public and private actors, the BIOLOC HUB seeks to unlock the potential of transforming local agricultural, forestry, and agro-industrial resources into high-value bio-based products.

The hub aspires to be a central point for developing a sustainable bioeconomy in Campania, fostering networking, stakeholder engagement, and knowledge dissemination. Our goal is to promote the valorization of by-products, reduce waste, and create new economic opportunities, especially in rural areas. By supporting research, innovation, and sustainable practices, BIOLOC hub in Campania strives to drive the transition to a circular economy, empowering local communities and contributing to a model of economic, social, and environmental sustainability.

Target communities for hub actions

The BIOLOC HUB in Campania prioritizes agro-forestry workers and livestock farmers, particularly in the province of Salerno and the Alta Irpinia area, as these sectors are fundamental to the region's economy but remain underdeveloped and fragmented. Limited innovation, small farm sizes, and a lack of circular practices result in the underutilization of valuable resources such as forestry residues, livestock manure, and by-products from the dairy sector. The circular bioeconomy offers a key solution to these challenges by transforming local resources – especially in marginal and rural areas – into new economic opportunities. By promoting sustainable forest management, regenerating agricultural land, and enhancing the use of agro-industrial waste, the bioeconomy can help revitalize these areas while reducing environmental impact. This approach not only increases the profitability of local businesses but also contributes to job creation and economic resilience, helping to reverse depopulation trends by offering new career paths for younger generations. By fostering knowledge exchange and promoting innovative business models, the BIOLOC hub in Campania aims to empower agro-forestry workers and livestock farmers, enabling them to fully benefit from circular bioeconomy practices and drive sustainable rural development.

1. Framing the bioeconomy hub in Campania, Italy: Context, challenges and collaborations

Bioeconomy context

Campania has a well-established bioeconomy framework, with both national and regional strategies shaping its development. The Italian National Bioeconomy Strategy, promoted by the Presidency of the Council of Ministers, serves as a key opportunity to reconnect the economy, society, and the environment through sustainable resource use and innovation. At the regional level, Campania's Bioeconomy Strategy is closely aligned with the national framework and plays an integral role in the Regional Smart Specialization Strategy, reinforcing its position as a benchmark for bioeconomy development in Italy.

Before the BIOLOC HUB's intervention, several economic, environmental, and social barriers hindered the full realization of Campania's bioeconomy potential:

- Economic fragmentation: The region's agriculture and livestock sectors are dominated by small, family-run businesses with limited access to innovation, investment, and new markets. This fragmentation reduces competitiveness and slows the transition to circular bioeconomy practices.
- Underutilized resources & environmental issues: While Campania has extensive agricultural land, forests, and livestock production, many of its natural resources—such as forestry residues, livestock manure, and dairy by-products—remain underexploited. Inefficient waste management, soil degradation, and land abandonment further weaken the sustainability of rural economies.
- Social barriers & depopulation: High unemployment, particularly among young people in rural areas, contributes to depopulation and a decline in traditional farming activities. A lack of awareness and education about bioeconomy opportunities prevents local workers from fully engaging in this emerging sector.

The circular bioeconomy can serve as a key tool for revitalizing Campania's rural and marginal areas. By raising awareness, fostering collaboration, and promoting knowledge exchange, the BIOLOC HUB supports the integration of bioeconomy principles into local economic activities. This initiative aims to accelerate the region's transition toward a circular and sustainable economic model, ensuring that rural communities fully benefit from bio-based innovation while strengthening environmental resilience.

Community assets and traditional practice

Campania's rural areas, particularly Alta Irpinia and the province of Salerno, offer a rich potential for bioeconomy initiatives due to their abundant biomass and high biodiversity. Once the focus of unsuccessful industrialization efforts, these regions are now seen as key areas for circular bioeconomy development, thanks to their agroforestry, livestock, and dairy production. The vast forest resources and marginal agricultural lands are essential assets that can be harnessed to create sustainable bio-based products, such as biofuels, bioplastics, and biofertilizers.

This shift towards a circular bioeconomy presents an opportunity to revitalize internal areas and counteract depopulation, offering a path for sustainable economic growth by utilizing the resources already available. The bioeconomy model promotes a transition to a more sustainable and inclusive production system, fostering both environmental conservation and job creation in rural communities. Through valorizing local resources, these areas can become crucial contributors to the national and European bioeconomy strategies.

Policy and advocacy

The BIOLOC HUB's activities are closely aligned with both regional and national policies focused on sustainability, bioeconomy, and social inclusion, contributing to the broader objectives of fostering environmental sustainability, economic development, and social inclusion in Campania.

Regional Smart Specialization Strategy (S3)¹

The Campania Region's Smart Specialization Strategy (S3) emphasizes the sustainable use of local resources, innovation, and the development of bioeconomy sectors. The BIOLOC HUB aligns with this strategy by promoting the valorization of agricultural, forestry, and agroindustrial by-products, and encouraging the transition towards more sustainable and circular production models. The focus on rural revitalization, particularly in marginalized areas like Alta Irpinia and Salerno, is directly in line with the S3's goals of fostering sustainable economic growth and job creation in rural areas.

Italian National Strategy for Bioeconomy - Implementation action plan (2020-2025)²

The BIOLOC HUB also aligns with the Italian National Strategy for Bioeconomy, which aims to reconnect economic activities, society, and the environment through sustainable bio-based industries. This strategy emphasizes the sustainable use of

¹ https://www.agenziacoesione.gov.it/wp-content/uploads/2022/12/RIS3-Campania-2021-2027_29092022-.pdf

² https://cnbbsv.palazzochigi.it/media/dccpbpam/pai-16122024_italiano.pdf

biomass, including residues from agriculture, forestry, and livestock sectors, to produce high-value bio-based products. The BIOLOC HUB directly contributes to this goal by promoting circular bioeconomy models, reducing waste, and supporting the development of sustainable value chains in Campania.

CSR Campania 2023-2027³

The BIOLOC HUB is in line with the CSR (Complemento per lo Sviluppo Rurale) Campania 2023-2027, which prioritizes sustainable rural development, social inclusion, and the revitalization of internal areas.

The CSR 2023-2027, approved by Regional Decree No. 121 on March 3, 2025, includes a series of targeted measures aimed at combating depopulation and promoting generational renewal in rural areas. Among these, intervention SRE02 supports the establishment of new farmers by offering financial incentives and technical assistance to help young people start new agricultural businesses. In addition, intervention SRD03 promotes the diversification of agricultural activities by encouraging the development of agritourism and other non-agricultural enterprises that can generate additional income and create new employment opportunities in rural areas. These interventions are designed to enhance local resources and traditional farming practices by integrating them into a sustainable development model that aims to strengthen the rural economy and improve the quality of life in local communities. Through support for practices such as organic farming, sustainable livestock breeding, and responsible forest management, the CSR 2023-2027 contributes to creating a favorable environment for the circular bioeconomy, offering concrete alternatives to urban migration.

In summary, the Hub mission is in line with CSR 2023-2027 of the Campania Region which represents an integrated strategic framework that addresses the challenges of rural depopulation by fostering innovation in the bioeconomy sector, encouraging the sustainable use of local resources, and promoting inclusive economic growth.

The BIOLOC HUB advocates for policies to address key barriers faced by marginalized groups, particularly agro-forestry workers and livestock farmers in rural Campania. The hub tackles the lack of knowledge and awareness about the circular bioeconomy by promoting training and awareness-raising initiatives. It also works to overcome regulatory and bureaucratic barriers that hinder diversification and market opportunities by pushing for policy reforms and simplified procedures. This has been achieved by actively involving policymakers and local government representatives in the hub's events and activities. By creating spaces for dialogue and collaboration, the BIOLOC HUB has brought to light the regulatory and bureaucratic barriers experienced by marginalized

³ https://agricoltura.regionecampania.it/CSR_2023-2027/pdf/DRD_121-03-03-25.pdf

groups. These interactions have helped raise awareness of the challenges at institutional levels, fostering a shared understanding and laying the groundwork for future reforms. Through this approach, the hub ensures that the voices of rural communities are heard and considered in policy discussions, with the ultimate goal of improving conditions and enabling inclusive participation in the bioeconomy. Additionally, the hub advocates for financial support and technical assistance to help small-scale farmers invest in sustainable technologies. Through these efforts, the hub aims to empower marginalized communities, enabling them to fully participate in the bioeconomy and create new opportunities for economic and environmental sustainability.

Key challenges

Lack of awareness of the CBE opportunities: many local agroforestry and livestock farmers lack awareness of the benefits and potential of the circular bioeconomy and the value of bio-based products.

Presence regulatory barriers i.e. unclear and inconsistent biomass classification with restrictions on the use of by-products, limited support for innovation with rigid eligibility criteria or administrative burdens.

Youth migration: high levels of unemployment and lack of opportunities in rural areas contribute to the migration of younger generations out of these areas, leading to depopulation.

Resource underutilization and lack of recognition of the potential of internal areas that are rich in biomasses that can be exploited and valorized.

By focusing on **raising awareness, fostering innovation, and promoting collaboration**, the BIOLOC HUB works to overcome these barriers, enabling a transition to a sustainable and inclusive bioeconomy in Campania rural areas.

Multistakeholder approach

The BIOLOC HUB is primarily supported by the core members of SPRING in Campania, who have been instrumental in driving the project's initiatives. These members provide valuable local knowledge, insights into regional challenges, and a strong foundation for the bioeconomy transition in the area.

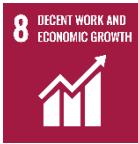
In addition to the core members, several stakeholders play an essential role in supporting the BIOLOC HUB's objectives and achieving its goals. These stakeholders include farmers, local businesses, government bodies, research centers, and sector associations, all of whom contribute to the bioeconomy transition in Campania.

Hub collaboration, partnerships and stakeholders	
<u>Key partnerships (core members):</u>	<u>Stakeholder contribution:</u>
<u><i>Luigi Iavarone - CEO of Iavarone Wood Technology</i></u> With years of experience in the forestry sector and bioeconomy, Luigi Iavarone plays a key role in providing expertise in bio-based products and sustainable forestry practices. His strong relationships with key regional actors, including Fulvio Bonavitacola, Vice President of Campania and Environmental Minister, are crucial for advocating and aligning policy with bioeconomy objectives.	<u><i>Fulvio Bonavitacola - Vice President of Campania Region</i></u> Fulvio Bonavitacola's involvement is crucial in bridging the gap between regional policy-making and the adoption of circular bioeconomy models. His contributions help align the BIOLOC HUB's initiatives with regional strategies, ensuring that bioeconomy principles are integrated into key policy frameworks and receive the necessary political backing.
<u><i>Amedeo Lepore - Professor of Business History and Finance at Vanvitelli University</i></u> Amedeo Lepore's expertise in regional and national economic policies and financing programs supports the HUB's goals of securing funding and policy alignment for bioeconomy initiatives. His academic background offers valuable insights into economic strategies and sustainable growth models.	<u><i>Research Centres</i></u> Local research institutions (i.e. the National Research Council and the Leather and Tanning Materials Experimental Station) are vital in advancing knowledge, innovation, and the development of new bio-based technologies. By engaging with these centres, the HUB can tap into cutting-edge research, supporting the implementation of sustainable practices across agro-forestry and dairy sectors.
<u><i>Marialuisa Saviano - Professor of Bioeconomy and Sustainable Management at University of Salerno</i></u> Specializing in bioeconomy principles and sustainable agricultural practices, Marialuisa Saviano's role is central to knowledge dissemination and training in the region. Her strong ties to the local community and in-depth understanding of bioeconomy and protected areas provide the HUB with the necessary tools	<u><i>Category Associations</i></u> Confragricoltura and Coldiretti, two major agricultural and livestock associations, play an instrumental role in reaching and engaging the target group, particularly small farmers and

<p>to raise awareness and empower local actors.</p>	<p>livestock producers. These associations help disseminate information, raise awareness, and facilitate capacity-building activities for local producers. They act as a communication channel, ensuring the hub's initiatives are aligned with the real needs and challenges of agro-forestry workers and dairy farmers.</p>
<p><u>SPRING Cluster</u></p> <p>As the coordinating body, SPRING Cluster facilitates collaboration and networking among all stakeholders. It supports the HUB's activities, ensuring smooth operations and engagement with local, public, and private sector actors.</p>	
<p>Together, these partners form the backbone of the BIOLOC HUB, driving its objectives of raising awareness, fostering innovation, and implementing sustainable bioeconomy practices in Campania's rural areas.</p>	<p><u>Other Universities</u></p> <p>Universities outside the core partnership, i.e. the University of Naples Federico II, Parthenope and Suor Orsola Benincasa, contribute to the dissemination of knowledge about the bioeconomy by organizing and supporting events and workshops. These activities raise awareness and provide valuable platforms for stakeholders to exchange ideas, promote research, and discuss the opportunities and challenges of implementing circular bioeconomy models in the region.</p>
	<p><u>Local Businesses (Agro-forestry and Dairy Sectors)</u></p> <p>Small agro-forestry and dairy businesses are key players in the bioeconomy value chain in Campania rural areas. Their active participation can help to drive the regional transition towards a more sustainable and circular economy, improving the economic viability of rural areas.</p> <p>In summary, the contributions of these stakeholders—research centres, policy makers, sector associations, universities, and local businesses—are essential to the BIOLOC HUB's success. Their engagement ensures a holistic approach to the bioeconomy, connecting innovation, policy, and</p>

	practical implementation in Campania's rural areas.
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SDG alignment

	The Campania BIOLOC HUB contributes to economic growth in rural areas by creating new market opportunities, promoting innovation, and stimulating job creation in the bioeconomy sector. It also encourages generational turnover in agriculture by providing young people with opportunities in bio-based industries.
	The hub fosters innovation in bio-based industries, supporting the development of new technologies and infrastructure for sustainable bioeconomy practices. It advocates for investment in circular economy solutions, such as biomass utilization, to drive the region's sustainable industrial development.
	The Campania BIOLOC HUB is dedicated to promoting sustainable production practices by supporting the valorization of agro-industrial waste and encouraging a shift towards circular, bio-based production models. This aligns with SDG 12 by reducing waste and promoting the efficient use of local resources.
	By promoting sustainable land management and the use of renewable resources, the hub supports efforts to mitigate climate change. The transition to a circular bioeconomy helps reduce carbon emissions through biomass energy and eco-friendly bio-based products.
	Through its support for sustainable forestry management and agricultural regeneration, the Campania BIOLOC HUB helps conserve biodiversity and restore degraded lands. It encourages the use of sustainable practices to protect ecosystems and promote the regeneration of rural landscapes.
	The hub focuses on creating networks and fostering collaborations among local and regional stakeholders, including farmers, businesses, government bodies, and research centers. This network-driven approach is essential to achieving a sustainable bioeconomy.

2. From strategy to impact: Actions, rationale and outcomes

To address the key challenges limiting the development of the bioeconomy in rural areas of Campania, the HUB adopted a coordinated strategy aimed at increasing awareness, strengthening capacities, and fostering institutional engagement. The selected actions were designed to complement one another and to address specific needs by targeting knowledge gaps, institutional alignment, and community involvement. Through the integration of education, advocacy, and innovation, the

BIOLOC Project laid the groundwork for a robust and inclusive bioeconomy ecosystem.

Initiatives and actions:	Rationale and expected impact:	Immediate outcomes:
Organization of local bioeconomy events (November 2023 - November 2024 - March 2025)	Raise awareness of circular bioeconomy, especially in rural/inland areas. Encourage stakeholder engagement, foster regional dialogue, and provide learning platforms for students and local actors.	Increased awareness and knowledge-sharing about bioeconomy. Engagement of 300+ students and 50+ stakeholders. New connections established across sectors. Greater visibility of local actors and their experiences.
Involvement of institutional figures (e.g., regional councillors, assessors)	Enhance political support for the bioeconomy. Align initiatives with regional policy objectives and encourage institutional commitment to sector development.	Strengthened political advocacy. Bioeconomy brought onto the regional policy agenda. Signals of long-term institutional backing for future projects.
Sharing of best practices from agro-forestry and dairy sectors	Provide tangible examples to inspire replication. Help stakeholders visualize entry points and benefits of joining the bioeconomy.	Broadened understanding of successful bioeconomy applications. Encouraged replication of practices among local stakeholders. Demonstrated real economic and social value of the sector.
Youth and student engagement in events	Address youth migration and rural depopulation. Cultivate interest in local economic opportunities tied to sustainability.	Improved youth involvement. Raised awareness of professional paths in the bioeconomy. Contributed to a narrative of local opportunity and revitalization.

Awareness campaigns and informational tools (e.g., newsletters)	Maintain ongoing engagement. Disseminate updates and knowledge to members and the public beyond event settings.	Sustained interest and flow of information among stakeholders. Reinforced message consistency and visibility of the BIOLOC project.
Support to bioeconomy training programmes (e.g., Biocirce Master's)	Build a specialized workforce for long-term sustainability of the sector. Bridge the gap between academic knowledge and industry needs.	Improved access to professional training. Strengthened industry-academia links. Created opportunities for future professionals in the bio-based economy.
Promotion of innovation initiatives (e.g., Terra Next, BioInvestIT)	Support startup development and new business models. Accelerate innovation in regional and national bioeconomy.	Fostered entrepreneurial growth. Created momentum for the development of new bio-based businesses and partnerships.

Examples of success

Over the three-year duration of the project, the activities carried out within the Campania BIOLOC HUB have helped small-scale agro-forestry and livestock workers in rural Campania to experience tangible and meaningful benefits that go beyond technical knowledge. By participating in local bioeconomy events and workshops, many farmers and livestock farmers were exposed for the first time to the concept of a circular bioeconomy. These initiatives not only helped them understand how bioeconomy principles apply to their daily work, but also gave them access to tools, contacts, and potential funding opportunities they had not previously considered. The involvement of institutional actors in these events also created space for marginalized voices to be heard. Farmers were able to share the regulatory and structural obstacles they face directly with regional authorities, an opportunity that fostered recognition of their needs within local policy discussions. Young people, in particular, benefitted from student-targeted events and awareness campaigns, which offered a new narrative about opportunity and purpose in rural areas. Many reported that they had never considered the bioeconomy as a viable career path before attending BIOLOC events. This work has laid the groundwork for future initiatives and long-term development efforts in the region. Altogether, these efforts have not only delivered immediate value but have also laid a strong foundation for continued support and long-term regional development.

Lessons learned

- Clear and effective communication is crucial for increasing awareness and encouraging participation. Appointing a dedicated communications manager can enhance the dissemination of information through targeted campaigns, social media, and community-based events.
- Thematic workshops and case study exchanges are valuable for sharing practical solutions. Organizing study visits to showcase real-life examples of the bioeconomy's positive impact can further strengthen understanding and inspire replication.
- Engaging regional policymakers in events has proven to increase political support and raise awareness of bioeconomy-related challenges and opportunities. Future hubs should focus on maintaining regular policy dialogues and producing position papers to advocate for favourable regulations and sustainable funding.

Sustainability of the hub

To ensure long-term sustainability after the conclusion of the BIOLOC Project, SPRING is committed to continuing the activities initiated during the project in collaboration with the core members of hub Campania. This ongoing effort will be supported by a combination of strategic initiatives and resources aimed at maintaining and expanding the project's impact over time.

Among the target groups that the hub will continue to support are small agro-forestry farmers and livestock farmers in inner rural areas—communities that closely reflect the identity and potential of the regional bioeconomy.

A key factor in sustaining these efforts is the presence of two additional funded projects in the Campania region (RIBES and BioINSouth). These projects will provide both financial support and a framework to continue promoting circular bioeconomy. By aligning with these ongoing initiatives, the hub can build on the knowledge, networks, and momentum generated during the BIOLOC Project, ensuring a seamless continuation of activities.

Furthermore, Spring is working to establish an office in Campania, which will serve as a permanent point of reference for local stakeholders. This office will play a crucial role in accessing regional funding opportunities, allowing the hub to secure new financial resources to support future initiatives.

All together to make the circular bioeconomy happen!

