HOW CAN THE EU BIOECONOMY STRATEGY SUPPORT CITIES AND REGIONS IN THEIR TRANSITION TO CIRCULAR BIOECONOMY

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As a leading association of local and regional authorities committed to sustainable resource management, the Association of Cities and Regions for sustainable Resource management (ACR+) actively promotes the transition to circular bioeconomy at regional and local level. With extensive expertise in supporting public authorities in their transition towards circularity, ACR+ welcomes the European Commission's initiative to revise the EU Bioeconomy Strategy. This revision presents a crucial opportunity to unlock the full potential of bioeconomy as a strategic tool for achieving sustainable and resilient economies, in line with European climate and environmental objectives.

Although bioeconomy relies on renewable resources, it is not necessarily circular by essence, and that circularity is not a given in biobased systems. To be circular, biobased systems must prioritize an optimised use of locally available materials – particularly from waste and secondary sources – before resorting to primary biomass extraction. These materials need to be kept in use for as long as possible and, at the end of their lifetime, be harmless when re-entering the biological cycle. Promoting a bioeconomy based on intensifying production of monocultures that reduce ecological biodiversity contradicts its same fundamental principles. Concepts of a circular bioeconomy must thus focus on reducing or eliminating "extractivism", ensuring that biobased products are, first and foremost, derived from existing material resources (before they become waste) rather than extracting new raw materials. On the same note, biobased does not mean biodegradable and therefore biobased alternatives may still pollute the environment or may still be hard to recycle.

Currently, several barriers hinder the shift to bio circular models in Europe: environmental trade-offs, socio-economic barriers (lack of knowledge and education) and financial (lack of support and business sustainability), a non-level playing field with linear value streams (competition with cheap fossil resources and optimized value chains), governance and policy barriers, as well as technological and logistic barriers (lack of knowledge on available feedstock and of adequate local infrastructure to valorize it, as well as lack of low development of technologies). The weak investment on secondary raw material markets is also an obstacle to circularity. The economic growth and intensified consumption paradigms are also among the key drivers of a business-as-usual approach

Local and regional authorities have a crucial role to play for enabling the transition to circular bioeconomy, through planning via a circular bioeconomy strategy, facilitating collaboration among local players, and through setting policy, legal, and economic instruments to foster circular bioeconomy value chains/projects.

To maximise impact and enable this shift, the revision of the EU bioeconomy strategy should foresee technical and financial support for European cities and regions. The following recommendations stem from concrete experiences of some ACR+ members (FADI (RO), Zero Waste Scotland (UK), Fryslan (NL), Pays de la Loire (FR), Region Wallonie (BE), Lipor (PT)) as well as EU funded project results.

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COLLECTION AND ANALYSIS OF DATA ON SECONDARY MATERIALS

Understanding resource flows, such as where materials originate, where they are processed, how they are used and what happens at end of life, does not only allow to detect and address trade-offs, but is also essential to optimise systems and close resource loops. The availability of feedstocks database is also key for determining the state of the art of bioeconomy in the region and hence lay the basis for a well-tailored circular bioeconomy strategy.

Recommendations

- Introduce a postal code system at the NUTS3[1] level to enable precise tracking and mapping of resource flows. This would allow policymakers and entrepreneurs to understand where resources are generated, processed, utilized, and disposed of, facilitating better decision-making, innovation and planning. The above system will allow to monitor what is the percentage of materials that are generated within a specific regional zone, and what percentage comes from elsewhere. This system will also simplify the computation of environmental impact assessment through the use of Life Cycle Assessment (LCA).

- Encourage Member States to set up and maintain annually updated, comprehensive, and freely accessible databases to support sustainability assessments of bioeconomy practices. They should capture: quantities, locations, and quality of available feedstocks, current uses and destinations of resources; seasonal and logistical fluctuations in supply. An example of national mapping tool is the online database for biowaste traceability (as part of the wider waste reporting platform) in Romania, launched on 3 June 2025.

- Encourage regions to develop resource maps (local biomass, industries, and workforce strengths) at the local level, such as the Scotland's Bioresource Data Tool, which tracks waste and by-products arising and available down to the local authority level. These maps should highlight potential feedstock hotspots, infrastructure availability, and logistics pathways, and several stakeholders, such as municipalities and industry players should be involved in their design to ensure accuracy and relevance.

SUPPORT SKILLS DEVELOPMENT AND JOB CREATION

There is a general lack of specialised courses and training on complex and transversal topics such as bioeconomy. The establishment of trainings on bioeconomy to consolidate knowledge in the region is an opportunity to create employment, while supporting the region in addressing its economic transformation challenges and revitalizing the economy.

Recommendations

- Funding for vocational training and curricula on bioeconomy and circular bioeconomy (i.e. expansion of Erasmus +). The free online trainings by the SCALEUP project provide a good example for the content and structure of these courses. Another good instance are the free courses for growers promoted by the Hemp4circularity project which coach primary producers on how hemp can be integrated into their farm and offers opportunities to network with other farmers and industry professionals. Such trainings should be completed with recognised theoretical knowledge (through universities ETS systems).

- Establishing an EU-wide certification to standardise skills and improve mobility that covers key areas like biomass processing and circular design.

- Strengthen universities' capacity to integrate bioeconomy and circularity concepts across a wide range of academic programmes, from engineering and economics to the social sciences.

[1] Nomenclature of territorial units for statistics, NUTS3 includes small regions.

STAKEHOLDER ENGAGEMENT

Public authorities have a key role to play in acknowledging and channelling the diverse and sometimes conflicting views and interests of local actors. Mobilizing all these actors during the design and implementation of regional bioeconomy strategies will not only help garner support around them but also bring additional expertise and ensure realistic and achievable objectives by involving those that operationalize the biobased value chains on the field.

Recommendations

- Support (also through financial means) the establishment and maintenance of peer learning platforms, where regions can exchange best practices and success stories. One example of this is the European Circular Economy Stakeholders Platform (ECESP).

- Promote technology and innovation clusters for stakeholder engagement.

  One example of regional cluster for bioeconomy is the Scottish Ocean Cluster established in March 2025. This cluster brings together several relevant stakeholders (investors, biotech industry, government, fish processors) in the fishery sector to maximise the value of fish and fish byproducts (using 100% of fish landed into Scotland) and to collectively unlock the full potential of new products made from fish processing 'waste' that currently goes to make fishmeal.

  Another example of regional initiative to build a solid biobased supply chain is the Fryske Hemp Fiber Deal established the first regional chain for biobased construction in the Netherlands, where farmers, housing associations, and construction companies are working together to use hemp fiber as insulation material, insulating over 1,000 homes. Through concrete agreements, farmers gain perspective and a stable market.

- Support the creation of professional roles at regional level (e.g. the subsidy programme for rural development LEADER or business agency representatives) to act as bioeconomy ambassadors, capable of bridging knowledge gaps and fostering trust among stakeholders. Although in some regional and local administrations these professional figures already exist, financial support is needed to cover the time spent by staff members in facilitating networks and hubs on bioeconomy.

BUSINESS SUSTAINABILITY

Regions can provide financial support for the first steps of the biobased project, such as feasibility studies, but European funding (ERDF and Horizon) is needed to finance R&D and standardization, as circular bio-based projects often face significant barriers when transitioning from the development or pilot phase to commercialization. These challenges include high capital expenditure (CAPEX) requirements for scaling technologies, limited access to financing, and uncertainties in market demand for bio-based products.

Additionally, the lack of supportive legal frameworks, standardized certification systems, and established supply chains further complicates this transition. Without clear pathways for financial backing, many innovative projects fail to achieve long-term economic viability.

Recommendations

- Introducing financial incentives for the production, marketing, and adoption of alternative and secondary bio-based materials and ingredients (e.g., extracts, 2nd generation bioplastics, biochemicals, compost) and only after established utilisation cascades also bioenergy (EU Level). Such incentives could for instance consist in Value Added Tax (VAT) reductions for secondary bio-based products produced within the EU, or direct investment subsidies for small and medium-sized enterprises (SMEs) transitioning from pilot to commercial scale.

- Ease access to funding to enable certification and promote open source. Certifying authority should be independent and the certification should include SEIA (socio-economic and environmental assessment).

- Strengthening public procurement for secondary bio-based products and services. A good strategy for stimulating innovative and circular solutions is to ask open questions to bidders regarding circularity of their offer and reward the most ambitious one. In the tender published by KAMP C for building 't Centrum in Belgium, bidders were asked to submit a performance statement regarding the percentage of materials of sustainable origins used in the building (including bio-ecological), and the buyer based the rating of 40% of the circularity criteria on the submitted performance statements. Based on good practices such as the one described above, the EU Commission should provide guidelines on Green Public Procurement (GPP) criteria for bio-based products.

- Providing guidance to EU regions on how to identify and support sustainable bioeconomy business model (general recommendations, tools to help decision making or decision flow chart with context-based criteria).