

TECHNICAL NOTE:

**SYNERGY AND ADDED VALUE OF
BIOECONOMY AND CIRCULAR
ECONOMY**

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Written by the SCAR Bioeconomy Strategic Working Group.

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Introduction and Background

The Bioeconomy Strategic Working Group (BSW) policy brief on the future of the European bioeconomy strategy¹ which was a result of the BSW-meeting in Paris on February 23/24 states that:

- “Conceiving and implementing the bioeconomy and the circular economy together will potentially lead to strong synergies. Political decisions should aim to establish a bioeconomy that uses bio-based resources in a circular way (‘circular bioeconomy’).”
- “Links with and the contribution of the bioeconomy to other policy areas is crucial. Strong synergies with other European strategies/policies are needed.”

The synergies between Circular Economy and Bioeconomy were further discussed in the BSW-meeting in Helsinki, on 7 June 2017. In preparation of the meeting, Member States/Associate Countries presented their views on the following questions around the relationship between Bioeconomy and Circular Economy:

- Is there a Circular Economy strategy and what is the scope of Circular Economy in your MS/AS?
- Do you have questions on the relationship between Circular Economy and Bioeconomy?
- How is governance in Circular Economy organised, does it connect to Bioeconomy?
- How does your country see the synergy between Bioeconomy and Circular Economy?
- What is needed on European level to seek this synergy?

During the meeting, the issue of scope, synergies and needs on European level were discussed in a world-café setting.

The results of these discussions are presented in this technical note.

¹ https://www.scar-swg-sbgb.eu/lw_resource/datapool/_items/item_28/policy-brief-23082017_final_template.pdf

Discussion and Recommendations

Views and positions of MS/AC in the BSW varied in the discussions around Bioeconomy and Circular Economy, but a number of shared views and commonalities between Bioeconomy and Circular Economy could be identified.

Scope

The scope of the Bioeconomy is described in the European definition as “production of renewable biological resources and their conversion into food, feed, bio-based products and bioenergy. It includes agriculture, forestry, fisheries, food and pulp and paper production, as well as parts of chemical, biotechnological and energy industries.” However, as claimed in the BSW “Policy Brief on the Future of the European Bioeconomy Strategy”, this definition should be enlarged by the ‘products and services’ provided by the Bioeconomy and should further emphasise the sustainability of the production systems (see Figure 1).

The term “Circular Economy” describes an economy, “where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimized”. In difference to the Bioeconomy, the Circular Economy considers all materials regardless of their origin (see Figure 2).

Figure 1: Dimensions/Facets of the Bioeconomy as discussed in the BSW

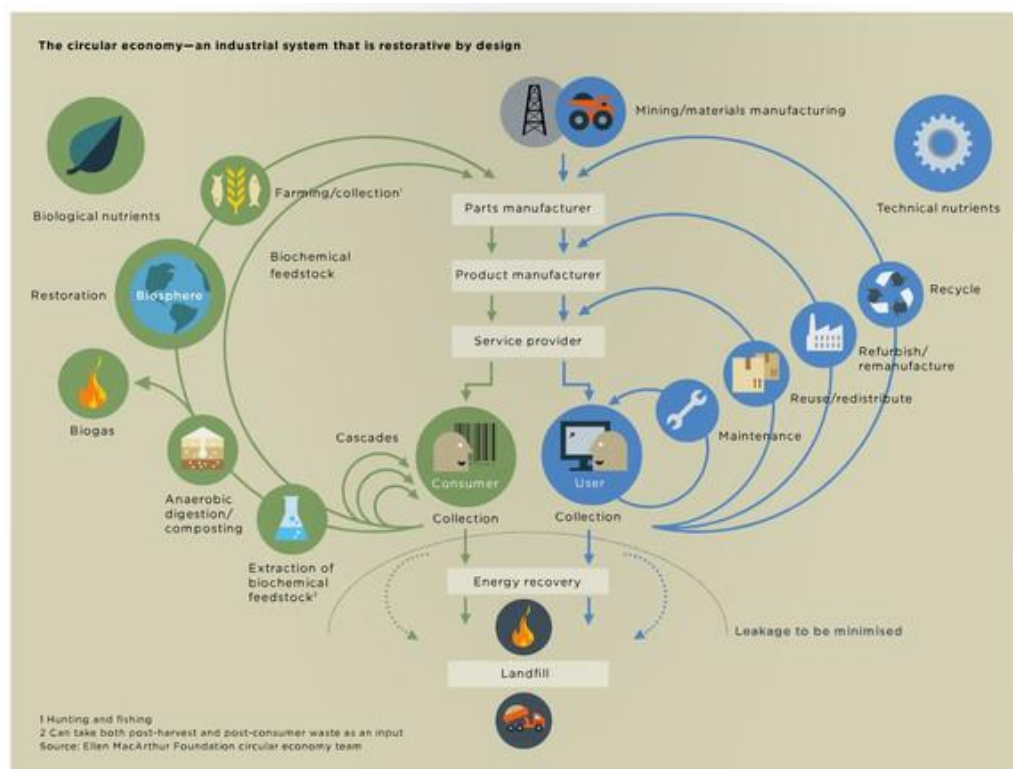
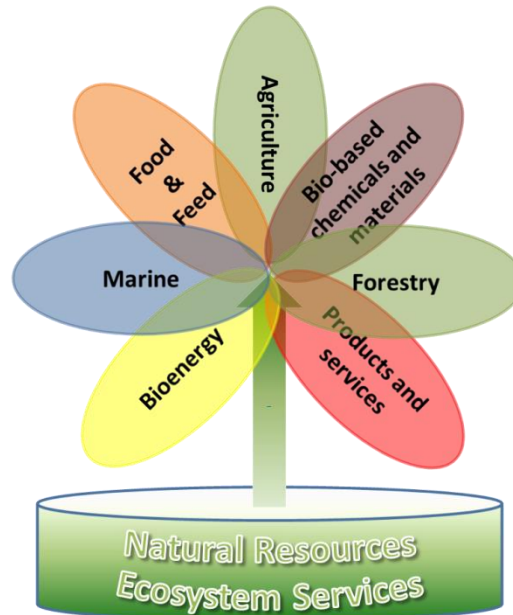


Figure 2: Diagram of the Circular Economy (by Ellen MacArthur Foundation)

The BSW sees clear overlaps between the two concepts and highlights the need for a coordinated implementation of policies aiming at the support of the transition towards a Bioeconomy or a Circular Economy in order to make full use of the potential synergies and the shared policy drivers, goals, barriers and strategies.

Hereafter, main overlaps of the two concepts, synergies and their specific added values are presented.

Differences and Overlaps

Both, Circular Economy and Bioeconomy aim at the transition of the current economy towards a more sustainable, future-oriented economy that is able to cope with the challenges of:

- An increasing populations that must be fed;
- The depletion of natural resources;
- The impacts of ever increasing environmental pressures;
- Climate change.

Furthermore, both strategies want to shape the transition towards a sustainable economy in the way that it contributes to e.g. jobs and growth, investments, the social agenda and innovation in the EU (see Figure 3).

The Bioeconomy focusses on the origin of the resources used/consumed in an economy and highlights the need for a sustainable (bio-) resource supply, as well as the processing of biological products and services (food, feed, bio-based materials and bio-energy) and the recycling of nutrients. The exploitation of the full potential of the Bioeconomy also aims for a substitution of non-renewables with sustainably produced renewables and actively looks for new materials, products, processes and services to increase the sustainability of our current economic activities, cutting across different sectors. It also pays attention to the development of new

business models based on new and sustainable value chains (waste and side-streams valorisation).

The Circular Economy stresses the importance of the design phase of products (to minimize raw material already at the beginning of value chains, to extend product-life and to enable easier re-use and re-cycling later on), of closing resource-cycles regardless of their origin, and of developing new “formats” of use and ownership (e.g. sharing economy; new business models).

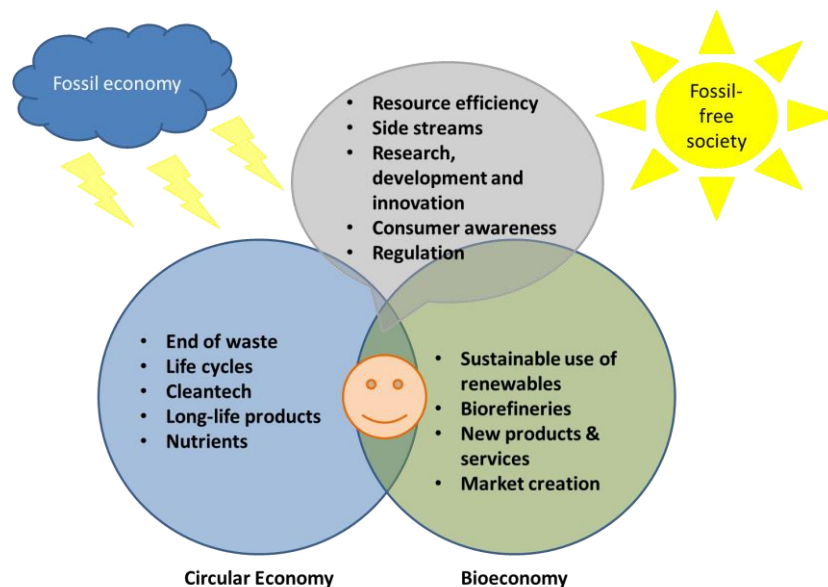


Figure 3: Overall context of Circular Economy and Bioeconomy, and specific and shared contributions of both to solving the grand challenges

To implement both EU-strategies, the same instruments can be (and are currently) used, such as:

- incentives for interdisciplinary R&D&I;
- the adaptation of regulations;
- the support of new business cases and the relevance of regional approaches;
- networking of stakeholders along and across value chains and industrial sectors.

Synergies

On synergies, it was discussed that:

The BSW is convinced that, due to the highlighted shared goals and drivers (reduction in the dependence on finite resources; greater efficiency in the use of resources; creation of jobs difficult to relocate offshore; the reduction of non-renewable carbon and the overall reduction of carbon emissions; new ways of working together; mitigation of and adaptation to climate change; contribution to the achievement of the SDGs.) and different focuses of the two concepts, Circular Economy and Bioeconomy are complementary and can benefit from each other as they both address the three pillars of sustainability (environmental, economic and social issues). Actually both share several research and innovation needs (e.g. organic waste valorisation; municipal solid waste; water and energy efficiency; fertilizers and phytosanitary products; materials and nutrient cycling; bioplastics) which deserve appropriate attention at national and European level.

Differences in the focuses on the production system, however, may lead to different actions depending on the focus (e.g. build houses with wood-based construction material or prefer recycled materials from demolished buildings).

The added value of both concepts is in their recognition of sustainability issues already at the start of the value chains before the production and provision of resources (starting with ecosystem services and input factors). Both actively look for new business opportunities and value in what has previously been called “waste”. They have the potential to build bridges between sectors that previously were not connected.

Both concepts mutually reinforce each other and developed together would allow to develop a sustainable economy that efficiently uses renewable, sustainably produced resources and maintains them in the economic cycle as long as possible. Leakages from the economic cycle are reduced. Unavoidable needs for new primary resources are met with sustainably produced renewable resources. Indeed, their joint development and implementation would help avoiding duplications and contradictions in legislation as well in financial measures (or in general, in the associated policy actions).

The BSW therefore sees the need to aim for a more circular bioeconomy which maximizes synergies while giving room for both approaches to further develop their individual strengths and opportunities. The BSW furthermore calls for a careful monitoring of the impacts of the deployment of Bioeconomy and Circular Economy, e.g. through monitoring of crucial ecosystem services humanity relies upon.

Needs on European level

The BSW sees a need to establish a concept-wise clarity of both, Bioeconomy and Circular Economy, at European level. The goals of the Bioeconomy and the Circular Economy should be interlinked. After this, there would be a possibility for combined instruments, e.g. in research and innovation funding and legislation.

More interaction between Circular Economy and Bioeconomy policy makers would be useful. More events combining Bioeconomy and Circular Economy concepts should be organised to improve possibilities for realising synergies. These events could be similar to Bioeconomy stakeholder consultations, for example. Also, there is a need for a more strategic platform identified to jointly discuss Bioeconomy and Circular Economy. This could be, e.g. a working group established by the Commission to discuss the concepts in common, or the BSW with enlarged membership.

The European Bioeconomy Strategy is playing a key role in the deployment of the Bioeconomy throughout Europe. It was launched in February 2012 and has motivated several MS/AC to define or update their strategies. The current review process for the Bioeconomy Strategy and its action plan is an appropriate moment to reflect upon a better interplay between the Bioeconomy and the Circular Economy.

The Circular Economy is lagging behind in this regard. So far, though most countries have clear policies, programmes or roadmaps on Circular Economy, only very few countries recognize the importance and opportunity to develop a strong national strategy.

