

1 NAME OF GROUP

SCAR Bioeconomy Strategic Working Group, SCAR BSWG

2 SHORT DESCRIPTION OF GROUP

2.1 SCAR BSWG IN BRIEF

The SCAR Bioeconomy Strategic Working Group (SCAR BSWG) started working in 2017. While the first mandate focused on research and fact finding, this was continued with a second mandate, which started in June 2019. The second mandate had a stronger focus on policy and strategy development support. The expiring third mandate of the SCAR BSWG has been marked by exceptional challenges, from major supply chain disruptions brought by health (Covid-19) and geopolitical crises, which added to the long-term challenges of climate change and loss of biodiversity. The transition to the European bioeconomy from niche to norm has been widely accepted as the right way forward to address these challenges. The Working Group actively contributed to this end, most notably by outlining RDI priorities with respect to the role of bioeconomy in sustainable global food systems (jointly with SCAR ARCH and SCAR Food Systems), and with respect to boosting demand for biobased products and technologies. Both actions resulted in position papers, aimed at decision makers at various levels and wider professional community. Starting in January 2025, SCAR BSWG enters in its fourth mandate.

2.2 CONTEXT AND RATIONALE FOR STRATEGIC EXCHANGE ON BIOECONOMY-RELATED RDI

The bioeconomy is a key strategic priority due to its potential to ensure food security, manage natural resources sustainably, reduce dependence on non-renewable resources, and strengthen European competitiveness. A diverse set of societal expectations will drive the European Bioeconomy in the years to come, such as:

Climate change and adaptation: Climate change increasingly affects natural resources, agriculture, and forestry. This will be one of the key drivers also in the future bioeconomy.

Loss of nature and decline in biodiversity: Restoration is a key issue in the bioeconomy. Reconciliation of different dimensions of future use of biomass will be challenging. Use of natural resources is becoming more sensitive, which can lead to polarized views, conflicting goals and decision-making.

Geopolitical tensions: International power relations are changing, which can undermine the rule of law and individual influence. EU's open strategic autonomy and security of supply will be integrated into bioeconomy discussions on various agendas more than before.

Polarization, inequality and populism: The contradictory development of inequality and equality is ongoing. Polarization is increasing. Social inequality grows, which can lead to social tensions and affect the stability of society. Populism rising and fact-based knowledge is challenged. These all affect bioeconomy directly or indirectly especially in decision making procedures on regional, national and EU level.

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Policy coordination and investment: Ensuring coherent policies and sufficient investment in RDI across member states.

Major supply chain disruptions: The pandemic and geopolitical crises have highlighted vulnerabilities in supply chains, necessitating resilient and adaptable bio-based solutions.

Utilization of natural resources: the sustainable utilization of natural resources means an ecologically, economically, and socially balanced use of natural resources that maintains their vitality for future generations.

Human capital and skills requirements: Capability requirements are changing, and the importance of RDI activities is emphasized. Future Bioeconomy needs novel competences and integration from biomass to innovative and sustainable use of raw materials.

Emerging technologies: The sustainable use of natural resources and economic development, as well as innovative solutions, can be promoted through technological means, but the challenges can also be significant. AI, digitalization and other disruptive technologies are essential parts of the future bioeconomy.

Competing uses of renewable carbon: Balancing the diverse demands for renewable carbon resources across sectors.

Energy Transition: Energy transition is a key factor in the EU's industrial, environmental, and energy policies.

Economic transition and competitiveness: These are based on sustainable development and innovative solutions that enable primary production as well as on the biobased circular economy. Clean Industrial Deal and green transition are basic key targets also in bioeconomy.

The role of bioeconomy-related RDI is to develop comprehensive, robust and scientifically sound solutions to respond the issues listed above and to keep our societies functional. As bioeconomy involves a wide and diverse array of sectors there is a clear need for a strategic exchange on RDI gaps and priorities in the sense of **reconciling several and potentially overlapping challenges and conflicting sectoral solutions**. Furthermore, to achieve the vision of efficiently and sustainably closed biomass loops, fully valorized side streams, and resilient biobased supply chains, bioeconomy-related RDI is expected to serve as **a bridge between sectors by fostering enabling technologies** such as biotechnology, digitalization, and bioprocess engineering. Furthermore, aspects such as primary production, sustainability, biodiversity, social and economic transformation processes must also be considered. In this context, RDI should not only focus on technology but also non-technological innovations.

2.3 AMBITION

According to the EU Bioeconomy strategy, the bioeconomy “...covers all sectors and systems that rely on biological resources (animals, plants, micro-organisms and derived biomass, including organic waste), their functions and principles. It includes and interlinks: land and marine ecosystems and the services they provide; all primary production sectors that use and produce biological resources (agriculture, forestry,

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*fisheries and aquaculture); and all economic and industrial sectors that use biological resources and processes to produce food, feed, bio-based products, energy and services (EC, 2018)”. While acknowledging that some EU Member States may have a broader perspective, where the bioeconomy includes medical applications or, more generally, all economic activities related to both living and non-living biological resources (such as biomass and information derived from natural systems, including genetic code, design principles, and regulatory mechanisms), **the scope of SCAR BSWG aligns with the EU Bioeconomy Strategy as its benchmark.***

The Bioeconomy encompasses various scientific, technological and policy areas as described in the EU Bioeconomy Strategy. While other SCAR Working Groups apply a sectorial approach to specific area of the bioeconomy, SCAR BSWG applies a **systemic approach**, focusing on RDI needs and priorities to bridge inter-sectoral boundaries, unlock synergies, increase sustainability, and advance the EU's bioeconomy goals while contributing to economic and environmental resilience. SCAR BSWG has the ambition to become a nexus and be closely connected with ongoing policy discussions and to provide strategic advice and orientation for the dedicated future RDI work in this domain. In this effect, activities and outputs of the SCAR BSWG should **contribute to informed and strategic planning of RDI tools and instruments** of different types (public/private), stages of research (basic/applied/commercial) and levels (EU, national, regional/local).

The work during the fourth mandate will build on the activities, results and deliverables from the first three mandates. Thematically, the work will follow the general evolution and the implementation pathways of the Bioeconomy as one of the EU strategic priorities, starting with the first EU Bioeconomy strategy from 2012, its 2018 update, the progress report from 2022, and the emerging new EU Bioeconomy strategy update (2025/26). The necessary attention will be given to other **relevant acts and EU strategies**, such as the EU Green Deal, Farm to Fork Strategy, the new Circular Economy Act and Action Plan , Blue Growth Policy, Industrial Strategy, Clean Industrial Deal, BiotechAct, Forest Strategy 2030 and further EU policies, in particular the Common Agricultural Policy.

SCAR BSWG will ensure due diligence with the key strategic orientations at the EU level, starting with the commitment to strengthen sustainable competitiveness as outlined in the Draghi Report. Inspiration and input defining the scope of the SCAR BSWG future actions will be drawn also from long-term strategic and foresight documents, such as Foresight Scenarios for the EU Bioeconomy in 2050 , the latest (sixth) and emerging 7th SCAR Foresight, the United Nation’s Sustainable Development Goals (SDGs), the EC’s vision for a sustainable and climate-neutral development and the Circular Economy Package.

3 FOURTH MANDATE OF SCAR BSWG - ORGANISATION

3.1 COORDINATION

Building on the experience of good cooperation in the current mandate and their readiness to face the future challenges of bioeconomy-related RDI, all three current Co-Chairs are willing to extend their effort into the fourth mandate. The proposal is therefore to retain the chairmanship of the SCAR BSWG retains the same:

Johanna Kohl (Luke, Finland)

Martin Behrens (FNR, Germany)

Luka Juvančič (University of Ljubljana, Slovenia)

3.2 TIMELINE

Date for Terms of Reference to be approved by SCAR Plenary: 05.12.2024

Proposed duration of the next mandate: 3 years

3.3 INTERNAL ORGANISATION

The Working Group will be steered by three co-chairs, who will be responsible for the overall management, to organise meetings of the Working Group and be the primary contact for the SCAR Secretariat (DG RTD). The SCAR co-chairs will be primarily, but not exclusively in charge of working communication with other SCAR Working Groups, relevant partnerships (e.g. CBE JU), initiatives (e.g. BIOEAST) and networks (e.g. ERRIN, EEN). Upon approval by the SCAR BSWG, the Chairs may activate a Core Group of a few members to support their work on a regular basis.

The co-chairs will inform the Working Group members about their activities, working contacts, possible projects and important events. The Working Group members will be invited to take part in those activities on their own initiative, in accordance with their areas of competence and professional interest.

The working mode will mostly take place in virtual working environment. Physical meetings shall only be organised back-to-back with main bioeconomy events so that broad participation of the members can be ensured. At least one of the co-chairs will be present at the major bioeconomy events organised in Brussels and elsewhere (e.g. EU Presidency events). Additional activities may include workshops (jointly organised with other initiatives or SCAR groups). For every event, a small taskforce will be formed to prepare the meeting and to translate the outcomes into deliverables.

3.4 MEMBERS, ASSOCIATES

Membership in the SCAR BSWG is open to all SCAR participating countries. Currently, the working group has 63 registered members from 25 countries (22 EU and 3 associated countries).

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The national SCAR delegates of each participating MS should inform, in writing, the SCAR BSWG co-chairs and the SCAR secretariat of their appointed and mandated national representative(s) and any changes that may occur during the group's lifetime.

In close collaboration with RefreSCAR (WP3 SCAR-Engage), the SCAR BSWG will take active part in empowering new SCAR BSWG members with knowledge and connections to enable their active participation and smooth integration into WG activities.

3.5 LIAISON WITH OTHER SCAR WGS

Considering the cross-sectorial nature of the SCAR BSWG, we will seek regular exchange with other SCAR Working Groups in order to cooperate on crosscutting and trans-sectorial RDI themes, to ensure synergies and avoid overlaps. When thematically appropriate, bilateral or multilateral projects (studies, workshops, other) with other SCAR Working Groups will be organised in order to triangulate the subject matter and develop common reports and position papers with RDI recommendations. A work plan including the planned exchanges with other SCAR Working Groups will be made annually and presented to the SCAR Steering Group for discussion and approval.

3.6 LIAISON WITH EC AND OUTREACH ACTIVITIES

The SCAR BSWG will maintain close working relations with DG RTD, which is the main EC contact for SCAR Working Groups.

On relevant occasions (thematic studies, workshops, dissemination activities) SCAR Bioeconomy Working Group will seek to establish working contacts with other EU Commission's services i.e. mainly within DG RTD (e.g. JRC), but also with DG ENV, DG AGRI, and DG GROW. In the same manner, SCAR Bioeconomy Working Group will liaise with other thematically relevant partnerships (e.g. CBE JU), initiatives, networks (e.g. ERRIN, EEN) and platforms (e.g. EBPF, International Bioeconomy Forum, International Advisory Committee for Global Bioeconomy).

3.7 RESOURCES

Resources from MS/AC are in kind (time of co-chairs and taskforce members, and all other members). The SCAR BSWG will continue to keep a good working relationship with the RefreSCAR project team, whose aim is to enhance the strategic functioning and capacities of SCAR Working Groups. Where appropriate, the Working Group will apply for appropriate RefreSCAR services to assist with the organization of events, such as face-to face meetings, workshops, or design and layout of the Working Party's written and electronic materials, as well as for commissioning of desk studies where appropriate.

4 AMBITION, WORK-PLAN, OUTCOME

4.1 AREAS OF WORK AND INDICATIVE SET OF THEMES

The main focus areas are summarised in the following section. The Working Group will actively engage in **three areas of work**: (i) developing RDI recommendations on dedicated topics, (ii) policy support and (iii) Outreach activities. For each of these areas of work, we briefly describe below **an indicative set of themes and expected results/outputs**. The set of themes may be amended or supplemented during the course of the mandate, allowing it to **adapt to new developments and strategic aims**.

I. Actions to develop RDI recommendations on dedicated topics

- Poly-crisis and bioeconomy response;
- Further topics of potential interest:
 - o Explore the Regional Dimension of the Bioeconomy
 - o Transformative innovation
 - o Ecosystem boundaries, security of supply and competing use of biomass

II. Policy support

- Active participation in the EU Bioeconomy Strategy update (focus on RDI priorities & instruments)
- Participation/support of FP10 planning
- Linking with relevant HE partnerships 2020-27 (CBE JU in particular) and active participation in the shaping of the post-2027 ecosystem
 - o stronger link with CBE JU State Representative Group
 - o exchange on RDI priorities in EU member states and associated countries
- Linking with relevant key actions of the EU Biotech and Biomanufacturing Initiative
 - o Ensure engagement & alignment with DG GROW activities on industry engagement on bioeconomy

III. Outreach activities

- Cooperative actions on dedicated topics (see II) with other SCAR WGs and initiatives beyond SCAR
- Cooperation on SCAR 6th Foresight: „Sustainable diets, circularity, diversity pathways in transition for resilient European agriculture and food systems in times of global crisis“

4.2 RISK AND RISK MITIGATION

- Lack of resources in some MS/AC for a more active participation
 - o Mitigation: use funding possibilities from RefreSCAR or a similar type of support measure
- Small group of MS/AC being actively involved
 - o Mitigation: actively search for new members and motivate them to participate (e.g. in collaboration with the BIOEAST Initiative)

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- Urgent policy matters not foreseen during the planning of the mandate necessitate a diversion from the work plan.
 - o Mitigation: SCAR BSWG is flexible and can react to upcoming policy matters. Adjustments of the (draft) work plan during the mandate are expected and will be discussed with the group members. If necessary, major changes will be discussed with the SCAR Steering Group and/or the Plenary.

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Appendix 1: Draft Work Plan 2025

Draft work plan for 2025, with planned activities and foreseen deliverables, version November 2024. Additional activities for 2025 might be added, depending for instance on possible requested input from the BSWG to support ongoing policy process with RDI advice. This work plan can be adjusted to react on new developments. Activities for the rest of the group’s lifetime will be defined on a yearly basis.

Activity	Description
1	RDI Topic and Case Studies “Poly Crisis – How can the Bioeconomy react” in collaboration with other SCAR WG (i.e. SCAR FOREST, SCAR ARCH) Foreseen Deliverable: RDI Recommendation Paper
2	Collaboration with other Working Groups and engagement with external initiatives to Explore the Regional Dimension of the Bioeconomy Foreseen Deliverable: meeting presentations, workshop/conference participation
3	Active Contribution of the SCAR BSWG to the EU Bioeconomy Strategy Update Foreseen Deliverable: to be further defined in consultation with DG RTD
4	Active Participation of SCAR BSWG in the Process of SCAR Foresight