BELLONA EUROPA

CONSULTATION RESPONSE

June 2025

Towards a circular, regenerative and competitive bioeconomy

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Introduction

Europe's transition to a climate-neutral and resource-efficient economy is accelerating the demand for biomass not only for food and materials, but increasingly for biofuels and bioenergy as fossil alternatives are phased out. This surge in biomass demand places significant pressure on terrestrial ecosystems, which are already strained by intensive agriculture, forestry, land-use change, and biodiversity loss.

At the same time, the EU has made strong and binding commitments to protect and restore nature, including targets under the Nature Restoration Law, the EU Biodiversity Strategy, and various global agreements such as the Kunming-Montreal Global Biodiversity Framework. These parallel ambitions, to scale up biomass use while safeguarding natural ecosystems, demand a more strategic and diversified approach to sourcing, while reducing consumption of land-based biomass.

In this context, Bellona believes the ocean represents a largely untapped opportunity that must be harnessed as a priority in the revised Bioeconomy Strategy. Marine bioresources, particularly low-trophic species such as macroalgae (seaweed) and bivalve molluscs, offer a promising, low-impact biomass source that does not compete for arable land or freshwater. Macroalgae grow rapidly without the need for fertilisers or pesticides and can be cultivated at scale along Europe's extensive coastlines.

Beyond its value as a biomass feedstock for bio-based materials, food, feed, and biofuels, macroalgae cultivation delivers multiple environmental co-benefits, including:

- Carbon dioxide absorption
- Nutrient removal and water quality improvement
- Provision of marine habitats
- Support for coastal resilience and climate adaptation

To reduce land-use pressures while scaling a sustainable bioeconomy, the EU must look seaward. This position paper calls for greater policy recognition and investment in marine biomass, including an ambitious target to significantly increase **EU algae production by 2030**. It also advocates for the development of a **European biomass hierarchy**, ensuring all biomass is used efficiently and in alignment with environmental, climate and social goals.

The bioresources used for both aquaculture and livestock feed represent a substantial share of the food system and its emissions. To make the best use of resources as well as to reduce the climate footprint of the food itself, **feed and feed ingredients must be a primary focus point.**

Bellona recommends:

- That the new EU bioeconomy strategy establishes a **biomass hierarchy** to ensure the best use of bioresources. Food waste should preferably be used for high-value products such as feed.
- That the EU set a **goal to increase macroalgae production** and introduce measures to stimulate market uptake by 2030. Europe needs more low-trophic aquaculture (LTA) to produce marine biomass for food, feed and biofuels. LTA delivers multiple environmental co-benefits.
- That **bioeconomy policy is aligned** with biodiversity and climate commitments, including the Nature Restoration Law and EU Biodiversity Strategy, to avoid land-use conflicts and ensure biomass is used sustainably and efficiently, based on ecological limits and robust carbon accounting.

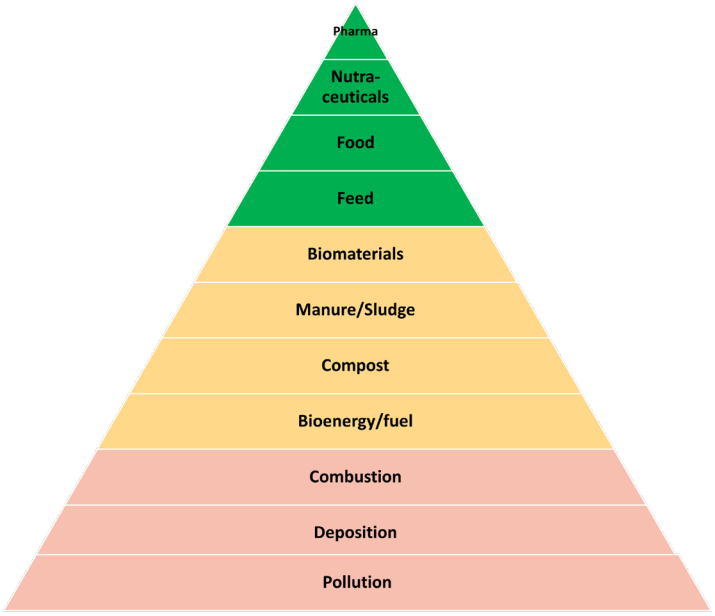
Specific Recommendations

1.1 Establish a biomass hierarchy for the best use of bioresources

Demand for bioresources is already high, and as the EU transitions towards a carbon-neutral society, these are often seen as a replacement for fossil resources. This is why Bellona recommends the EU to **establish a political anchored biomass hierarchy** for the best use of bioresources, that prioritises high-value uses like food and feed over lower-value applications such as power generation.

A biomass hierarchy will serve as a tool for decision makers when multiple sectors compete for the same bioresource. This framework should support the **cascading use principle**, help reduce land-use conflicts, and ensure biomass is directed toward the highest environmental and economic value.

It is also highly relevant to link this framework with the "**Energy Union Strategy**" where one of five dimensions are "security, solidarity and trust - diversifying Europe's sources of energy and ensuring energy security" so that energy is available to process biomass into the desired products.



Moving resources upwards in this hierarchy will both create value and reduce pressure on the food system.

Bellona places a special focus on sustainable feed and feed ingredients. In our 2023 report Råvareløftet (Raw material initiative, **Magasin: Råvareløftet - Bellona.no**), we presented a roadmap highlighting opportunities and barriers for to increasing production of raw materials for feed.

The European feed sector is large and growing: 267.761 million metric tons of feed were produced in 2024 – a 2.7% increase from 2023. Meanwhile, with over 59 million tons of food waste generated annually in the EU, more systematic efforts are needed to reduce food waste, and to convert these resources into high-value products like feed, rather than using them for fuel and energy.

The food-first principle has to be integrated into policies and proper carbon accounting has to determine the substitution potentials of bio-based materials for fossil based taking into account ILUC and carbon opportunity-costs of restoring ecosystems.

Finally, this biomass hierarchy must also account for **energy use**. All processes to make a product in these categories demand energy, and in a context of limited supply, the energy demand parameter needs to be factored into decisions about bioresource allocation.

1.2 Increase EU algae production and market uptake by 2030

Set a formal EU target to increase algae production, especially macroalgae, and accelerate its integration into food, feed, materials, and other markets. Support this by:

- Providing **dedicated funding** under Horizon Europe and the Blue Economy programs.
- Creating **simplified regulatory pathways** for algae-based products.
- Investing in **regional algae farming infrastructure** and processing capacity.
- Enhancing **market accessibility and public-private support mechanisms**.

1.3 Align bioeconomy policy with biodiversity and climate commitments

Ensure that EU bioeconomy policy is coherent with existing environmental objectives, including the Nature Restoration Law and the EU Biodiversity Strategy, this entails:

- Conducting biomass availability assessments that **account for ecological limits and achieving the LULUCF goals**.
- Supporting both marine and land-based biomass that contributes to **nature-restoration and climate mitigation**.
- Increasing policy coherence with the broader climate policy landscape and with key legislation that regulate and incentivise biomass utilisation. This would include **changing the zero-rating of biomass in the Renewable Energy Directive** but also informing the formulation of the 2030/2040 climate goals based on a **proper carbon accounting**, that takes the value of biomass kept in ecosystems for climate and biodiversity into account.
- Ensuring the revised Bioeconomy Strategy **avoids exacerbating land-use conflicts** and that biomass is used sustainably and efficiently.
- Avoiding policy incentives that lead to **unsustainable land-use expansion**.
- Guaranteeing that **biodiversity standards** are met, to build long-term ecological resilience.

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* I am giving my contribution as

- ○ Academic/research institution
- ○ Business association
- ○ Company/business
- ○ Consumer organisation
- ○ EU citizen
- ○ Environmental organisation
- ○ Non-EU citizen
- ◉ Non-governmental organisation (NGO)
- ○ Public authority
- ○ Trade union
- ○ Other

* First name

Carolina

* Surname

Rodriguez Balda

* Email (this won't be published)

carolina@bellona.org

* Organisation name

255 character(s) maximum

Bellona Europa

* Organisation size

- ○ Micro (1 to 9 employees)
- ○ Small (10 to 49 employees)
- ◉ Medium (50 to 249 employees)
- ○ Large (250 or more)

Transparency register number

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision-making.

29934726424-76

* Which sector does your organisation represent?

- [ ] Forest owners (public and private)
- [ ] Forestry industry
- [ ] Forest certification schemes
- [ ] Forest-based industry
- [ ] Non-wood industry
- [ ] Farmers' associations
- [ ] Trade and business associations
- [ ] Fertilizers and feed companies
- [ ] Biogas companies
- [ ] Other agriculture business
- [ ] Biotechnology associations
- [ ] Biotechnology companies and industry
- [ ] Biorefineries and chemistry associations
- [x] Environmental NGOs
- [ ] Research institutions and project
- [ ] Investment funds
- [ ] Water companies/water authorities
- [ ] Consumers associations
- [ ] Public authorities
- [ ] Citizens
- [ ] Others

If others, please specify:

200 character(s) maximum

* Please, specify the type of product your organisation produces or represents:

- [ ] Intermediate product (e.g. ingredient or component for a final product)
- [ ] Final product (used as it is)
- [ ] Both intermediate and final products
- [x] Other (e.g. services)

* Country of origin

Please add your country of origin, or that of your organisation.

This list does not represent the official position of the European institutions with regard to the legal status or policy of the entities mentioned. It is a harmonisation of often divergent lists and practices.

- ○ Afghanistan
- ○ Åland Islands
- ○ Albania
- ○ Algeria
- ○ American Samoa
- ○ Andorra
- ○ Angola
- ○ Anguilla
- ○ Antarctica
- ○ Antigua and Barbuda
- ○ Argentina
- ○ Armenia
- ○ Aruba
- ○ Australia
- ○ Austria
- ○ Azerbaijan
- ○ Bahamas
- ○ Bahrain
- ○ Bangladesh
- ○ Barbados
- ○ Belarus
- ◉ Belgium
- ○ Belize
- ○ Djibouti
- ○ Dominica
- ○ Dominican Republic
- ○ Ecuador
- ○ Egypt
- ○ El Salvador
- ○ Equatorial Guinea
- ○ Eritrea
- ○ Estonia
- ○ Eswatini
- ○ Ethiopia
- ○ Falkland Islands
- ○ Faroe Islands
- ○ Fiji
- ○ Finland
- ○ France
- ○ French Guiana
- ○ French Polynesia
- ○ French Southern and Antarctic Lands
- ○ Gabon
- ○ Georgia
- ○ Germany
- ○ Ghana
- ○ Libya
- ○ Liechtenstein
- ○ Lithuania
- ○ Luxembourg
- ○ Macau
- ○ Madagascar
- ○ Malawi
- ○ Malaysia
- ○ Maldives
- ○ Mali
- ○ Malta
- ○ Marshall Islands
- ○ Martinique
- ○ Mauritania
- ○ Mauritius
- ○ Mayotte
- ○ Mexico
- ○ Micronesia
- ○ Moldova
- ○ Monaco
- ○ Mongolia
- ○ Montenegro
- ○ Montserrat
- ○ Saint Martin
- ○ Saint Pierre and Miquelon
- ○ Saint Vincent and the Grenadines
- ○ Samoa
- ○ San Marino
- ○ São Tomé and Príncipe
- ○ Saudi Arabia
- ○ Senegal
- ○ Serbia
- ○ Seychelles
- ○ Sierra Leone
- ○ Singapore
- ○ Sint Maarten
- ○ Slovakia
- ○ Slovenia
- ○ Solomon Islands
- ○ Somalia
- ○ South Africa
- ○ South Georgia and the South Sandwich Islands
- ○ South Korea
- ○ South Sudan
- ○ Spain
- ○ Sri Lanka

- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- Gibraltar
- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Morocco
- Mozambique
- Myanmar/Burma
- Namibia
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Türkiye
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine

- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
- Lebanon
- Lesotho
- Liberia
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Russia
- Rwanda
- Saint Barthélemy
- Saint Helena Ascension and Tristan da Cunha
- Saint Kitts and Nevis
- Saint Lucia
- United Arab Emirates
- United Kingdom
- United States
- United States Minor Outlying Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **Fo r the purpose of transparency, the type of respondent (for example, 'business association, 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published.** Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

○ **Anonymous**
Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

◉ **Public**
Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

☑ I agree with the personal data protection provisions

EU bioeconomy strategy: objectives, opportunities and contribution to the EU's goals

*** What should be the main objectives of the new EU bioeconomy strategy?**

The bioeconomy can contribute to the EU economy and society in many ways, for example related to its ability to increase competitiveness, sustainability, circularity, and resilience in the EU, against the background of global competition, while ensuring food security, employment and welfare.

Please, select which are in your view the **four** most relevant objectives.

The new EU bioeconomy strategy should focus on…

Maximum 4 selection(s)

☐ ...improving the position of the EU bioeconomy in the global competition
☐ ...strengthening the biotech and biomanufacturing sectors in the EU
☑ ...increasing circularity across bioeconomy value chains
☑ ...ensuring food security in the EU and promoting sustainable food systems in the EU
☐ ...improving the provision of renewable and affordable energy
☐ ...contributing to climate mitigation and adaptation

- [x] ...fostering environmentally sustainable production, supply and use of biomass, in particular to halt biodiversity loss
- [ ] ...increasing employment possibilities in bioeconomy sectors
- [ ] ...ensuring income and welfare in the rural and remote areas of the EU
- [x] ...protecting and restoring the ecosystems that provide services for people in the EU (e.g. clean air and water)

Please, specify any additional objectives that should be considered:

500 character(s) maximum

*** What should be the main areas of innovation and opportunity of the new EU bioeconomy strategy?**

The bioeconomy offers several opportunities and innovations and can create new business models.

Please, select which are in your view the **four** most relevant areas.

The new EU bioeconomy strategy should use the opportunities and innovation potential of:

Maximum 4 selection(s)

- [x] **Advancements in biotechnology and agriculture**. The development of new biotechnological capabilities can improve agricultural productivity, reduce dependency on chemical inputs, and increase crop resilience to climate change. Precision breeding, microbial solutions, and bio-based fertilisers are examples of innovations driving sustainable agricultural practices.
- [ ] **Sectors beyond medicine and food.** While traditionally associated with pharmaceuticals and food production, the bioeconomy is expanding into multiple sectors, including textiles, construction and chemicals. This diversification opens new markets and reinforces economic resilience.
- [x] **Sustainable biomaterials as alternatives to plastics.** The emergence of bio-based materials offers viable alternatives to conventional plastics, reducing environmental pollution and dependency on fossil-based resources. Innovations in biopolymers contribute to the circular economy.

- [ ] **Improved biofuels and sustainable energy solutions.** Advancements in biofuel technologies are increasing efficiency and sustainability, providing renewable energy options that can play a role in achieving the EU's decarbonisation goals. Bioenergy solutions contribute to energy security and a low-carbon economy.
- [ ] **Market scale-up and economic growth.** The bioeconomy has the potential to scale up rapidly, creating new business opportunities and employment across various value chains. By investing in bio-based industries, the EU can strengthen global competitiveness and attract new investment.
- [x] **New sources of protein and sustainable and novel food systems.** Innovations in alternative proteins, including plant-based, microbial, and insect-based sources can enhance food security and reduce environmental impact.
- [x] **Investment in research and innovation.** Continuous investment in bioeconomy-related research and development is crucial to unlocking new solutions, improving efficiency, and addressing challenges such as resource scarcity and environmental degradation. Collaborative efforts between academia, industry, and policymakers can accelerate progress.

Please, specify any additional opportunities and innovations that should be considered:

500 character(s) maximum

How should the EU bioeconomy strategy contribute to achieving the EU climate goals?

The EU is committed to cut greenhouse gas emissions by 55% by 2030 and to reach climate neutrality by 2050. To achieve these climate goals, we need to promote green transition in all our economic sectors and change production and consumption patterns.
The sustainable and circular bioeconomy can play a major role in achieving EU climate goals through various practices, measures and innovations.

Please, rank the below climate action pathways according to their relative importance.

In your opinion, the bioeconomy strategy should contribute to...

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* …substituting fossil-based and energy-intensive raw materials by bio-based material, renewable resources and biomass	◉	○	○	○	○	○
* …promoting innovations and biotechnology solutions with decarbonisation potential	○	◉	○	○	○	○
* … fostering resource efficiency and a circular economy approach across bioeconomy value chains	◉	○	○	○	○	○
* …recovering and recycling organic waste and by-products as raw material for bio-based materials and products instead of using primary raw material	◉	○	○	○	○	○
* …encouraging production and consumption towards bio-based products with longer lifetimes and reduced environmental impact. (e.g. wood in buildings and furniture)	○	◉	○	○	○	○
* ...promoting sustainable consumption	○	◉	○	○	○	○

* ...improving the resilience and productivity of primary production, sustainable agricultural practices or carbon farming	◉	○	○	○	○	○
* …supporting soil management practices, such as sequestering and storing carbon, improving the soil's capacity to retain water	○	◉	○	○	○	○
* …increasing carbon sinks in forests through sustainable afforestation and sustainable forest management	○	◉	○	○	○	○
* …increasing carbon sinks in marine the environment (e.g. by restoring seagrass and seaweed beds)	◉	○	○	○	○	○
* … scaling up blue bioeconomy low carbon products (algae, molluscs) while removing excess carbon and nutrients from the marine environment	◉	○	○	○	○	○
* …providing potential alternatives to animal protein such as plant- and microbial-based (e.g. fungi-and bacteria-based) protein	○	◉	○	○	○	○

Please, specify any other significant ways in which the bioeconomy could contribute to EU climate objectives:

500 character(s) maximum

How should the EU bioeconomy strategy contribute to achieving the EU biodiversity goals?

The provision of biomass for the bioeconomy depends on the resilience and integrity of the ecosystems that generate biomass. The triple planetary crisis (biodiversity loss, pollution and climate change) and degraded ecosystems impact the variety and quantity of ecosystem services and biomass productivity, while demand for them is diversifying and intensifying in the EU and globally.

A sustainable and circular bioeconomy can help to reduce the pressure on ecosystems while ensuring alignment with the Kunming-Montreal Global Biodiversity Framework's targets for biodiversity protection and restoration. To do so, the bioeconomy should prioritise nature-based solutions thatimprove ecosystem services and support the EU biodiversity targets.

Please, rank according to their relative importance the below ways in which the strategy should contribute to achieving the EU biodiversity goals.

In your opinion, a bioeconomy that protects biodiversity should support...

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* …land management practices, business models and value chains that prevent and reverse natural ecosystem degradation	◉	○	○	○	○	○
* …farming practices and agricultural models that ensure environmentally sustainable biomass production	◉	○	○	○	○	○

* ...sustainable forest management practices that have a positive impact on biodiversity and nature, contributing to the resilience of forests against anthropic pressures and climate change	◉	○	○	○	○	○
* ...business models that continue and improve the provision of ecosystem services (clean air, soil retention, flood control, water purification and replenishment, biodiversity, carbon sequestration and storage, nature-based recreation)	◉	○	○	○	○	○
* …solutions to regenerate biological resources (e.g. bioremediation, depollution of brownfields for biomass production)	◉	○	○	○	○	○
* …resource efficiency, circularity and innovations across bioeconomy value chains to get more added value from fewer primary natural resources	◉	○	○	○	○	○
* …use of organic waste and by-products instead of primary natural resources	◉	○	○	○	○	○
* …adiversified, stable and fair income for primary producers	○	◉	○	○	○	○
* …locally adapted solutions and reorientation of traditional bioeconomy actors	○	◉	○	○	○	○

Please, identify any other significant ways the bioeconomy could contribute to EU biodiversity goals:

500 character(s) maximum

The EU bioeconomy: barriers and risks impeding or slowing down its growth and potential measures to address them.

The EU bioeconomy faces multiple interconnected barriers that hinder or slow down its growth and development. The Commission has identified the below barriers based on studies, reports and workshops, and position papers and other contributions from stakeholders and Member States. The upcoming new EU bioeconomy strategy aims to tackle these barriers. The barriers have been divided into following subgroups:

- regulatory barriers
- financing barriers
- market barriers
- other barriers

Please, select the two barriers per subgroup that in your view are the most relevant ones.

Which of the following barriers hinder or slow down the most the growth of the EU bioeconomy?

* Regulatory barriers

Maximum 2 selection(s)

- [x] Complex regulatory requirements and lack of harmonisation at the EU and national level for bio-based materials and products
- [ ] Lengthy and burdensome permitting and administrative procedures that are slowing down uptake of bio-based products
- [ ] Insufficient harmonisation of standards across the EU for bio-based products
- [ ] Lack of an updated regulatory framework for novel biotechnologies and innovations
- [ ] Insufficient guidance, capacity building and support for small to medium-sized Enterprises MEs and start-up at EU and national level
- [ ] Unfair competition of bio-based products with conventional fossil-based products (e.g. lack of a regulatory level playing field in the single market, insufficient regulatory incentives)
- [x] Unclear or insufficient rules on what constitutes sustainable sourcing of biomass within the planetary boundaries
- [ ] Lack of synergies between EU, national and local strategies

* Financing barriers

Maximum 2 selection(s)

- [ ] Limited access to financing for investments in bio-based production and biomanufacturing due to risk factors
- [ ] Lack of an efficient EU capital market to finance start-ups and scale-ups

- [x] Insufficient financial incentives and support for primary producers to engage in nature positive actions that ensure and contribute to ecosystem integrity and resilience for long-term sustainable supply of biomass and ecosystem services that increase the value of the bioeconomy (biodiversity investment gap)
- [x] Insufficient research and development funding across the bioeconomy value chain
- [ ] Unfair competition of bio-based products with conventional fossil-based products (e.g. lacking regulatory level- laying field inn the single market, lacking regulatory incentives)

* **Market barriers**

Maximum 2 selection(s)

- [ ] Lack of demand for bio-based products
- [ ] Restrictions to bio-based products in comparison with fossil-based products due to several reasons (e.g. novelty, higher prices, lower scale)
- [ ] Lack of infrastructure for the processing of woody biomass for high-value applications
- [x] Lack of infrastructure (e.g. recycling facilities, pilot facilities and equipment) for start-ups and scaleup and for recycling of organic waste
- [ ] Impacts on the availability of biomass for other applications of existing policies that prioritising biomass for energy
- [x] Lack of strategies to increase the availability of sustainably sourced biomass and to ensure resilient supply chains for different uses of biological resources
- [ ] Uncertainty about the sufficiency of sustainably sourced biomass availability in the EU and globally

* **Other barriers**

Maximum 2 selection(s)

- [ ] Lack of education programmes on bioeconomy production methods, products and services.
- [x] Lack of transparent and reliable information on the environmental and climate benefits and impacts on the bioeconomy of products and services
- [ ] Lack of skilled workforce on bioeconomy production methods, products and services
- [ ] Barriers specific to product groups (please, specify these groups in the below free text box)

- [ ] Limited consumer knowledge and acceptance of certain novel bioeconomy products and services
- [ ] Lack of awareness of the potential of the bioeconomy
- [ ] Limited use of artificial intelligence and other digital solutions and technologies to promote the uptake of the bioeconomy

Please, specify barriers to specific product groups

500 character(s) maximum

Please, specify any additional barriers that should be considered:

1500 character(s) maximum

If you have evidence to substantiate some of your answers above, please provide it below (e.g. via links) or upload it as a separate document:

500 character(s) maximum

Please, upload your file(s)

Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

Which of the below potential risks are relevant to the EU bioeconomy?

The growth of the EU bioeconomy may face, or even lead to, specific c risks, such as deepening the potential gap between increasing demand of biomass and what can be sustainably harvested, as identified by some reports (e.g. the European Biomass Puzzle by the European Environmental Agency). This potential biomass gap can, in turn, result in difficulties in ensuring long-term competitiveness, lead to increased competition for land between different bioeconomy uses and endanger, for example, carbon sinks.

Other risks relate to a shortage or unstable supply of certain natural resources and raw materials due to climate change impacts, such as droughts, floods or forest fires. This question refers to the kind of strategic risks that affect whole societies, rather than just individual companies or other bioeconomy actors, such as farmers.

Please, assess the importance of the below potential related to the EU bioeconomy.

What is the relative importance of the following potential risks for the EU bioeconomy?

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Lack of stable supply of sustainably sourced biomass and competition for it between different uses, such as for food, materials, products, energy and ecosystem services	◉	○	○	○	○	○
* Societal concerns linked to the ethics and safety of biotechnologies and its solutions	◉	○	○	○	○	○
* Loss of competitiveness of the sector due to an altering landscape and uncertain regulatory framework	○	○	◉	○	○	○
* Spread of invasive species (e.g. blue crabs, round goby) competing with and harming local species traditionally used in bioeconomy	○	◉	○	○	○	○

Please, specify any additional risks that should be considered:

500 character(s) maximum

Which measures would help to address the above barriers and to promote sustainability, circularity and competitiveness of the EU bioeconomy?

The upcoming new EU bioeconomy strategy aims to address the barriers, to the EU bioeconomy, to promote its sustainability, circularity and competitiveness, and to ensure a fair transition across EU at national, regional and local level.

Please, rank according to their relative importance the measures that, in your view, should be considered as part of the new EU bioeconomy strategy.

Regulatory and policy measures

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Simplify and speed up permitting procedures and biotech and biomanufacturing solutions	○	○	◉	○	○	○
* Create regulatory sandboxes and/or pilot regulatory regimes for bio-based products and services	○	○	◉	○	○	○
* Improve policy consistency and harmonisation between EU and national regulations and reduce administrative burden	○	◉	○	○	○	○
* Promote integrated territorial biomass strategies that take into account environmental, climate and anthropogenic risks to the biomass stock and balance ecosystem, climate adaptation/mitigation and biomass supply needs	◉	○	○	○	○	○
* Introduce regulatory incentives such as mandatory bio-based content requirements (e.g. bio-based plastic in packaging) to promote biomaterials and bioproducts	◉	○	○	○	○	○
* Develop sustainability criteria for biomass use beyond energy use	◉	○	○	○	○	○
* Improve monitoring and knowledge of the condition of biodiversity, ecosystems and ecosystem services and its uptake to underpin ecosystem conservation and restoration, secure long-term provision of biomass, and increase the value and the resilience of the bioeconomy	◉	○	○	○	○	○

Measures to engage with value chain actors

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Introduce platforms, networks or alliances to boost development and uptake of the bioeconomy and efficient implementation and achievement of the EU bioeconomy strategy's objectives	○	◉	○	○	○	○
* Raise awareness of benefits and environmental impacts of bio-based materials and products compared to fossil-based ones	○	◉	○	○	○	○
* Support public-private partnership programmes for biotech solutions, biomanufacturing and other bio-based products	○	◉	○	○	○	○
* Introduce a support scheme for small to medium-sized enterprises, with grants to promote collaboration and the scaling-up of operations	◉	○	○	○	○	○
* Develop education and training programmes to support reskilling and upskilling of workers in the bioeconomy, e.g. biotech and regenerative and circular business models	○	◉	○	○	○	○
* Support involvement of primary producers in bioeconomy value chains and diversification of economic activities	◉	○	○	○	○	○
* Support for regions and Member States to develop bioeconomy strategies and monitor progress	◉	○	○	○	○	○
* Develop market opportunities in non-EU countries	○	◉	○	○	○	○
* Promote global partnerships and cooperation for sustainable and circular bioeconomy	○	◉	○	○	○	○

Funding and financing measures

	Very Important	Important	Neutral	Slightly important	Not at all important	I do not know
* Develop and facilitate the uptake of sustainable financing tools, in particular private investments, that reward primary producers and landowners for environmentally sustainable biomass production, improving the resilience and integrity of ecosystems and the provision of ecosystem services (e.g. carbon/nature credits)	○	◉	○	○	○	○
* Finance more research and innovation to strengthen knowledge based on bioeconomy, including biomass supply and demand innovations	◉	○	○	○	○	○
* Improve funding and capacity building for regions and Member States to scale-up bioeconomy innovation and allow the transition from laboratory to the market	◉	○	○	○	○	○
* Support the uptake of innovative bio-based products and services (e.g. product-as-a-service applications for example related to fertilizers)	○	◉	○	○	○	○
* Incentivise data-driven approaches to the bioeconomy value chain: from satellite data for biomass production to new digital solutions in support of logistics, traceability, etc.	○	◉	○	○	○	○

Please, specify any additional policy measures that should be considered:

1500 character(s) maximum

1. Establish a biomass hierarchy: Implement a biomass hierarchy prioritising high-value applications over lower-value uses. This framework will guide decision-making and ensure biomass is used efficiently, supporting the cascading use principle to maximise environmental and economic benefits. It should align with the Energy Union Strategy to ensure energy availability for biomass processing.
2. Accelerate the use of marine biomass: Set an ambitious target to significantly increase algae production by 2030, focusing on species like macroalgae. The EU should support this through funding programs, simplified regulations, and regional infrastructure investments.
3. Support sustainable feed production from bioresources: The EU should promote the conversion of food waste and secondary bioresources into high-value products like feed, rather than bioenergy. With millions of tons of food waste annually, the EU can reduce waste and ensure resources are used sustainably, in line with the Circular Economy Action Plan.
4. Align bioeconomy policy with broader EU climate and biodiversity goals like the Nature Restoration Law and the EU Biodiversity Strategy to avoid land-use conflicts and ensure bioresources are used sustainably and efficiently, based on ecological limits and robust carbon accounting.

Additional input

Please, specify any additional issues that should be raised:

1500 character(s) maximum

You are welcome to upload a position paper on bioeconomy with possible recommendations on specific issues here (three pages maximum).

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