

# Public consultation - IA on EU Algae initiative

Fields marked with \* are mandatory.

## Introduction

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### **Public consultation on the EU Algae initiative**

The initiative aims at increasing sustainable production, ensure safe consumption and boost the innovative use of algae and algae-based products in the European Union.

The objectives of this consultation are to:

- Collect facts, views and opinions on current challenges in the algae production and consumption as well as options and preferences for resolving them,
- ensure all voices are heard with adequate representation of all stakeholder groups – industry, public authorities, civil society, research; academia, NGOs, EU citizen, etc., and
- gather further information, including roadmaps, policy briefs, studies and analysis of policies, actions and technologies.

This survey seeks both your general opinion on the algae sector and provides an opportunity to answer more specific questions related to unlocking algae potential in Europe.

This survey should take approximately 10 to 30 minutes to complete. You can pause filling in the survey and continue at a later time. All information collected via the survey will be stored and handled in a confidential manner and compliant with the GDPR. You are entitled to upload a document or position paper to your contribution (maximum size 3 MB).

## About you

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### \* Language of my contribution

- Bulgarian
- Croatian
- Czech
- Danish
- Dutch
- English
- Estonian
- Finnish
- French
- German
- Greek
- Hungarian
- Irish
- Italian
- Latvian
- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

### \* I am giving my contribution as

- Academic/research institution

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

\* First name

\* Surname

\* Email (this won't be published)

\* Scope

- International
- Local
- National
- Regional

\* Level of governance

- Local Authority
- Local Agency

\* Level of governance

- Parliament
- Authority
- Agency

\* Organisation name

255 character(s) maximum

\* Organisation size

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

Transparency register number

255 character(s) maximum

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

\* Country of origin

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

- |   |  |                                     |  |
|---|--|-------------------------------------|--|
| <input type="radio"/> Afghanistan         | <input type="radio"/> Djibouti           | <input type="radio"/> Libya         | <input type="radio"/> Saint Martin                     |
| <input type="radio"/> Åland Islands       | <input type="radio"/> Dominica           | <input type="radio"/> Liechtenstein | <input type="radio"/> Saint Pierre and Miquelon        |
| <input type="radio"/> Albania             | <input type="radio"/> Dominican Republic | <input type="radio"/> Lithuania     | <input type="radio"/> Saint Vincent and the Grenadines |
| <input type="radio"/> Algeria             | <input type="radio"/> Ecuador            | <input type="radio"/> Luxembourg    | <input type="radio"/> Samoa                            |
| <input type="radio"/> American Samoa      | <input type="radio"/> Egypt              | <input type="radio"/> Macau         | <input type="radio"/> San Marino                       |
| <input type="radio"/> Andorra             | <input type="radio"/> El Salvador        | <input type="radio"/> Madagascar    | <input type="radio"/> São Tomé and Príncipe            |
| <input type="radio"/> Angola              | <input type="radio"/> Equatorial Guinea  | <input type="radio"/> Malawi        | <input type="radio"/> Saudi Arabia                     |
| <input type="radio"/> Anguilla            | <input type="radio"/> Eritrea            | <input type="radio"/> Malaysia      | <input type="radio"/> Senegal                          |
| <input type="radio"/> Antarctica          | <input type="radio"/> Estonia            | <input type="radio"/> Maldives      | <input type="radio"/> Serbia                           |
| <input type="radio"/> Antigua and Barbuda | <input type="radio"/> Eswatini           | <input type="radio"/> Mali          | <input type="radio"/> Seychelles                       |
| <input type="radio"/> Argentina           | <input type="radio"/> Ethiopia           | <input type="radio"/> Malta         | <input type="radio"/> Sierra Leone                     |
| <input type="radio"/> Armenia             | <input type="radio"/> Falkland Islands   | <input type="radio"/>               | <input type="radio"/> Singapore                        |

- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- 
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands
- Gabon
- Georgia
- Germany
- Ghana
- Gibraltar
- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
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- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Morocco
- Mozambique
- Myanmar /Burma
- Namibia
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- 
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
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- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- 
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- 
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- 
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Turkey
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
- United States Minor Outlying Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
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- |  |                                  |   |   |
|--|----------------------------------|---|---|
| <input type="radio"/> Cuba                             | <input type="radio"/> Kyrgyzstan | <input type="radio"/> Russia                                      | <input type="radio"/> Wallis and Futuna |
| <input type="radio"/> Curaçao                          | <input type="radio"/> Laos       | <input type="radio"/> Rwanda                                      | <input type="radio"/> Western Sahara    |
| <input type="radio"/> Cyprus                           | <input type="radio"/> Latvia     | <input type="radio"/> Saint Barthélemy                            | <input type="radio"/> Yemen             |
| <input type="radio"/> Czechia                          | <input type="radio"/> Lebanon    | <input type="radio"/> Saint Helena Ascension and Tristan da Cunha | <input type="radio"/> Zambia            |
| <input type="radio"/> Democratic Republic of the Congo | <input type="radio"/> Lesotho    | <input type="radio"/> Saint Kitts and Nevis                       | <input type="radio"/> Zimbabwe          |
| <input type="radio"/> Denmark                          | <input type="radio"/> Liberia    | <input type="radio"/> Saint Lucia                                 |   |

\* Please specify your organisation's role/relevance in the algae industry

- Production/cultivation of algae
- Pre-processing of algae
- Processing of algae into end-products
- Provide technology /services for algae production
- Sales of algae end-products
- Industry associations
- Research & development organisations
- Non-governmental organisations
- Educational organisations
- None, I am a private person
- Other, please specify

\* Please specify your organisation's role/relevance in the algae industry

*255 character(s) maximum*

\* To optimize the value of your contribution we request to indicate to which of these subsectors your input refers

- Microalgae/Cyanobacteria (including Spirulina)
- Macroalgae

Both

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. **For 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**

The type of respondent that you responded to this consultation as, your 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.

**Public**

Your name, the type of respondent that you responded to this consultation as, your country of origin and your contribution will be published.

#### \* 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](#)

## 1. General questions

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1.1. Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) those areas which you consider should be prioritized in the EU algae sector.

	1	2	3	4	5	No opinion
* Simplification of administrative procedures	<input type="radio"/>					
* Regulation for the algae sector	<input type="radio"/>					
* Access to space and water	<input type="radio"/>					
* Improve EU algae industry's competitiveness	<input type="radio"/>					
* Ensure fair market competition	<input type="radio"/>					
* Ensure skilled workforce and training	<input type="radio"/>					
* Improve awareness and acceptance of the consumers about algae products	<input type="radio"/>					
* Integration of the algae sector in the local economy	<input type="radio"/>					
* Potential contribution of algae towards environmental sustainability	<input type="radio"/>					
* Availability of funding	<input type="radio"/>					

1.2. For what uses do you see the most promising potential of algae? (optional)

*at most 3 choice(s)*

- Human food and food ingredients
- Animal/fish feed and ingredients
- Pharmaceuticals
- Cosmetics
- Biofertilizers
- Biostimulants
- Bioremediation (fixing carbon, phosphorus and nitrogen in water)
- Innovative applications (textiles, 3D printing, etc.)
- Other, please specify

\* Please specify

*255 character(s) maximum*

1.3. There will be 5 webinars organised around the topics below. Please feel free to express your interest to join one or more of them

- Improving governance framework
- Supporting the functioning of the market
- Ensuring sustainable development of the EU algae sector
- Increasing social awareness and acceptance
- Closing knowledge, research, technological and innovation gaps

## 2. More specific questions on the targeted activities to support the sustainable growth of the algae sector

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2.1. Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of each of the following objectives to unlock the EU algae sector's potential

	1	2	3	4	5	No opinion
* 1. Improving governance framework	<input type="radio"/>					
* 2. Supporting the functioning of the market	<input type="radio"/>					
* 3. Ensuring sustainable development of the EU algae sector	<input type="radio"/>					
* 4. Increasing social awareness and acceptance of algae production, products and applications	<input type="radio"/>					
* 5. Closing knowledge, research, technological and innovation gaps	<input type="radio"/>					

Please provide us with further details on why you chose "very important" for the objective "Improving governance framework" (optional)

*500 character(s) maximum*

Please provide us with further details on why you chose "very important" for the objective "Supporting the functioning of the market" (optional)

*500 character(s) maximum*

Please provide us with further details on why you chose "very important" for the objective "Ensuring sustainable development of the EU algae sector" (optional)

*500 character(s) maximum*

Please provide us with further details on why you chose “very important” for the objective "Increasing social awareness and acceptance of algae production, products and applications" (optional)

*500 character(s) maximum*

Please provide us with further details on why you chose “very important” for the objective "Closing knowledge, research, technological and innovation gaps" (optional)

*500 character(s) maximum*

### 3. Improving governance framework

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3.1. Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of the following measures to improve regulatory and governance framework.

	1	2	3	4	5	No opinion
* Guidelines for sustainable cultivation and production of algae	<input type="radio"/>					
* Guidance on large scale cultivation of algae in multi-use settings (e.g. combination with windfarms, include in local Maritime Spatial Planning, etc)	<input type="radio"/>					
* Standardisation of specifications for algae products and production methods (built on existing standards and standards under development)	<input type="radio"/>					
* Recommendations for harmonised licensing of seaweed farms	<input type="radio"/>					
* Recommendations for labelling of sustainable, safe and/or organic algae products	<input type="radio"/>					

\* 3.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\* 3.3. What kind of work, in terms of administrative burden, is added/removed when governance measures referred to in 3.1. are implemented?

\* 3.4. Which of the following topics as regards algae, in your opinion, should be governed at EU level?

- Safety standards (e.g. level of heavy metals or arsenic in seaweed)
- Status of algae products (organic/inorganic)
- The ecological footprint from algae production
- Bioremediation by algae
- Others, please specify

\* Please specify

### 3.5 Impact from proposed governance framework changes

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\* 3.6. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- Guidelines for sustainable cultivation and production of algae
- Guidance on large scale cultivation of algae in multi-use settings (e.g. combination with windfarms, include in local Maritime Spatial Planning, etc)
- Standardisation of specifications for algae products and production methods (built on existing standards and standards under development)
- Recommendations for harmonised licensing of seaweed farms
- Recommendations for labelling of sustainable, safe and/or organic algae products

\* 3.7. What is, in your opinion, the most significant economic impact of improving the governance framework? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector

- Impact on the expansion / scale-up of micro- and macroalgae production facilities
- Impact on the market uptake of innovative products
- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 3.8. What is, in your opinion, the most significant social impact of improving the governance framework? (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 3.9. What is, in your opinion, the most significant environmental impact of improving the governance framework (Multiple options possible)

- Impact on CO<sub>2</sub> and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
- Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)
-

Other, please specify

\* Please specify

*1000 character(s) maximum*

#### 4. Supporting the functioning of the market

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4.1. In your opinion, how could the functioning of the market best be supported? Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of each measure.

	1	2	3	4	5	No opinion
* Introduce well-targeted and easy accessible financial support that will accelerate the development of the EU's blue bioeconomy and algae sector	<input type="radio"/>					
* Support the development of market-based instruments to monetize bioremediation and other ecosystem services based on algae production	<input type="radio"/>					
* Develop European standards for safety and environmental sustainability to use throughout the EU algae sector	<input type="radio"/>					
* Increased government procurement of algae-based products	<input type="radio"/>					
* Support/assist the industry to bring new algae species to the market under the Novel Food Regulation	<input type="radio"/>					
* Increase demand by raising awareness on the benefits of seaweed	<input type="radio"/>					
* Support technological developments	<input type="radio"/>					
* Introduce an EU innovation prize for the macroalgae and microalgae industry	<input type="radio"/>					

\* 4.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\*

4.3. What kind of work, in terms of administrative burden, is added/removed when measures to support the functioning of the market referred to in 4.1. are implemented?

4.4. What are the most striking barriers that prevent the EU algae sector from sustainable growth?

4.5. Impact from proposed measures on the supporting of the EU market

\* 4.6. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- Introduce well-targeted and easy accessible financial support that will accelerate the development of the EU's blue bioeconomy and algae sector
- Support the development of market-based instruments to monetize bioremediation and other ecosystem services based on algae production
- Develop European standards for safety and environmental sustainability to use throughout the EU algae sector
- Increased government procurement of algae-based products
- Support/assist the industry to bring new algae species to the market under the Novel Food Regulation
- Increase demand by raising awareness on the benefits of seaweed
- Support technological developments
- Introduce an EU innovation prize for the macroalgae and microalgae industry

\* 4.7. What is, in your opinion, the most significant economic impact of supporting the functioning of the market? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector
- Impact on the expansion / scale-up of micro- and macroalgae production facilities
- Impact on the market uptake of innovative products

- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 4.8. What is, in your opinion, the most significant social impact of supporting the functioning of the market (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 4.9. What is, in your opinion, the most significant environmental impact of supporting the functioning of the market? (Multiple options possible)

- Impact on CO2 and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
- Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

## 5. Ensuring sustainable development of the EU algae sector

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5.1. In your opinion, what measures would ensure a sustainable development of the EU algae sector? Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of each measure.

	1	2	3	4	5	No opinion
* Create an EU wide sector organisation/network	<input type="radio"/>					
* Create and maintain a web-based one-stop-shop for EU algae stakeholders for knowledge, good practices sharing, mapping of funding, algae project results, etc	<input type="radio"/>					
* Create and maintain an assistance mechanism for EU algae stakeholders	<input type="radio"/>					
* Identify and assess specific needs and availability of investment funding for innovation, technology, infrastructure, knowledge and skills development	<input type="radio"/>					
* Mapping and keeping an up-to-date EU funding sources overview for EU algae sector	<input type="radio"/>					
* Support to start-ups in the algae sector in accessing the value chain, including contacts with others companies, knowledge institutes and/or regulators	<input type="radio"/>					

What else, in your opinion, should the one-stop-shop contain/deal with?

What should the mandate for such an assistance mechanism include?

\* 5.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\*

5.3. What kind of work, in terms of administrative burden, is added/removed when measures to ensure a sustainable development of the EU algae sector referred to in 5.1. are implemented?

#### 5.4. Impact from measures ensuring the sustainable development of the EU algae sector

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\* 5.5. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- Create an EU wide sector organisation/network
- Create and maintain a web-based one-stop-shop for EU algae stakeholders for knowledge, good practices sharing, mapping of funding, algae project results, etc
- Create and maintain an assistance mechanism for EU algae stakeholders
- Identify and assess specific needs and availability of investment funding for innovation, technology, infrastructure, knowledge and skills development
- Mapping and keeping an up-to-date EU funding sources overview for EU algae sector
- Support to start-ups in the algae sector in accessing the value chain, including contacts with others companies, knowledge institutes and/or regulators

\* 5.6. What is, in your opinion, the most significant economic impact of ensuring a sustainable development of the EU algae sector? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector
- Impact on the expansion / scale-up of micro- and macroalgae production facilities
- Impact on the market uptake of innovative products
- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector

Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 5.7. What is, in your opinion, the most significant social impact of ensuring a sustainable development of the EU algae sector? (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 5.8. What is, in your opinion, the most significant environmental impact of ensuring a sustainable development of the EU algae sector? (Multiple options possible)

- Impact on CO<sub>2</sub> and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
- Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

## 6. Increasing social awareness and acceptance

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6.1. In your opinion, how could social awareness of stakeholders in the EU algae sector and public acceptance of algae products best be increased? Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of each measure.

	1	2	3	4	5	No opinion
* EU wide communication campaign(s) of benefits on human health of algae food products	<input type="radio"/>					
* EU wide communication campaign on environmental, social and commercial benefits of algae products	<input type="radio"/>					
* Support and promote eco-labelling of sustainable, safe and /or organic algae products	<input type="radio"/>					
* Publication of guidance for stakeholders on awareness and acceptance of algae	<input type="radio"/>					
* Inclusion of algae production into maritime spatial planning processes	<input type="radio"/>					
* Support Member States and their Nutrition Centres to provide attractive information on algae	<input type="radio"/>					
* Support the algae sector at European and global conferences such as UN Climate Change Conference (COP26) and World Economic Forum	<input type="radio"/>					

\* 6.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\* 6.3. What kind of work, in terms of administrative burden, is added/removed when measures to increase social awareness and acceptance referred to in 6.1. are implemented?

#### 6.4. Impact from measures on increasing social awareness and acceptance

\*

6.5. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- EU wide communication campaign(s) of benefits on human health of algae food products
- EU wide communication campaign on environmental, social and commercial benefits of algae products
- Support and promote eco-labelling of sustainable, safe and/or organic algae products
- Publication of guidance for stakeholders on awareness and acceptance of algae
- Inclusion of algae production into maritime spatial planning processes
- Support Member States and their Nutrition Centres to provide attractive information on algae
- Support the algae sector at European and global conferences such as UN Climate Change Conference (COP26) and World Economic Forum

\* 6.6. What is, in your opinion, the most significant economic impact of increasing social awareness and acceptance? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector
- Impact on the expansion / scale-up of micro- and macroalgae production facilities
- Impact on the market uptake of innovative products
- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\*

6.7. What is, in your opinion, the most significant social impact of increasing social awareness and acceptance? (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 6.8. What is, in your opinion, the most significant environmental impact of increasing social awareness and acceptance? (Multiple options possible)

- Impact on CO2 and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
- Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

## 7. Closing knowledge, research and innovation gaps

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7.1. How could knowledge, research and innovation gaps best be closed? Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of each measure.

	1	2	3	4	5	No opinion
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* Developing improved algae cultivation systems (integrated multi-trophic aquaculture, offshore cultivation) or methods (e.g. cellular mariculture) contributing to fighting the current technical constraints in the production systems and consequently upscaling production volumes	<input type="radio"/>					
* Developing improved algae processing systems (biorefineries), processing algae into multiple products and for multiple applications	<input type="radio"/>					
* Establishing a monitoring framework, targets and methodologies for (1) quantifying ecosystem services (e.g. carbon sequestration, blue carbon credits, nutrients uptake), (2) carrying capacities of EU waters for seaweed aquaculture and marine permaculture and (3) impacts of cultivation, restoration and harvesting on marine ecosystems	<input type="radio"/>					
* Research to strengthen the potential nutritional benefits of algae	<input type="radio"/>					
* Research to deliver new innovative algae-based products	<input type="radio"/>					
* Targeted support to industry helping to move from research /demonstration stage to the market	<input type="radio"/>					
* Research on safe and secure algae production methods in closed systems (eg. by using animal based biofertilizers)	<input type="radio"/>					
* To support higher education programs in the area of blue biotechnology and innovative solutions for algae cultivation	<input type="radio"/>					
* Fund doctoral theses in the area of innovative solutions, knowledge, data or good practices on the blue bioeconomy and algae	<input type="radio"/>					

\* 7.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\* 7.3. What kind of work, in terms of administrative burden, is added/removed when measures to close knowledge, research and innovation gaps referred to in 7.1. are implemented?

7.4. What specific actions, in your view, could help to improve the collaboration among academia, research and industry?

## 7.5. Impact from closing knowledge, research and innovation gaps

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\* 7.6. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- Developing improved algae cultivation systems (integrated multi-trophic aquaculture, offshore cultivation) or methods (e.g. cellular mariculture) contributing to fighting the current technical constraints in the production systems and consequently upscaling production volumes
- Developing improved algae processing systems (biorefineries), processing algae into multiple products and for multiple applications
- Establishing a monitoring framework, targets and methodologies for (1) quantifying ecosystem services (e.g. carbon sequestration, blue carbon credits, nutrients uptake), (2) carrying capacities of EU waters for seaweed aquaculture and marine permaculture and (3) impacts of cultivation, restoration and harvesting on marine ecosystems
- Research to strengthen the potential nutritional benefits of algae
- Research to deliver new innovative algae-based products
- Targeted support to industry helping to move from research/demonstration stage to the market
- To support higher education programs in the area of blue biotechnology and innovative solutions for algae cultivation
- Fund doctoral theses in the area of innovative solutions, knowledge, data or good practices on the blue bioeconomy and algae

\* 7.7. What is, in your opinion, the most significant economic impact of closing knowledge, research and innovation gaps? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector
-

Impact on the expansion / scale-up of micro- and macroalgae production facilities

- Impact on the market uptake of innovative products
- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector
- Increase in R&D (i.e. the number of innovations seen)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 7.8. What is, in your opinion, the most significant social impact of closing knowledge, research and innovation gaps? (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 7.9. What is, in your opinion, the most significant environmental impact of closing knowledge, research and innovation gaps? (Multiple options possible)

- Impact on CO2 and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
-

Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)

Other, please specify

\* Please specify

*1000 character(s) maximum*

## 8. Potential regulatory measures

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8.1. Please indicate, on a scale from 1 to 5 (1 = not important, 5 = very important) the importance of implementing the following measures.

	1	2	3	4	5	No opinion
* Targets (binding or voluntary) for substitution of fish-based fish feed and animal feed with algae-based feed	<input type="radio"/>					
* Better inclusion of algae in the Common fisheries policy	<input type="radio"/>					
* Targets for governments agencies to purchase/subsidize the price of algae-based food, the use of feed, and other products	<input type="radio"/>					
* Identification of regulatory gaps such as in agriculture, limiting use of algae-based feed/fertilisers	<input type="radio"/>					
* Establish an enabling regulatory framework allowing the deployment of algae-based (pilot) ecosystem services projects (e.g. bioremediation (removal of nutrients, CO2 from the water), biological carbon capture and storage, carbon pricing, carbon credits, marine permaculture)	<input type="radio"/>					
* Improved implementation of the Organic Regulation e.g. as regards algae international partnership initiatives	<input type="radio"/>					
* Effective patents for algae technologies	<input type="radio"/>					

\* 8.2. Are there any additional measures that should be incorporated?

- Yes
- No

\* Please elaborate

\*

8.3. What kind of work, in terms of administrative burden, is added/removed when regulatory measures referred to in 8.1. are implemented?

8.4. Could you provide some examples of the consequences for you/your organisation of the absence of adequate regulatory frameworks in the EU algae sector?

### 8.5. Impact from the potential regulatory measures

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\* 8.6. Please choose the measures which according to you will have the highest impact

*at most 3 choice(s)*

- Targets (binding or voluntary) for substitution of fish-based fish feed and animal feed with algae-based feed[1]
- Better inclusion of algae in the Common fisheries policy
- Targets for governments agencies to purchase algae-based food, feed and other products, or materials
- Identification of regulatory gaps such as in agriculture, limiting use of algae-based feed/fertilisers
- Establish an enabling regulatory framework allowing the deployment of algae-based (pilot) ecosystem services projects (e.g. bioremediation (removal of nutrients, CO<sub>2</sub> from the water), biological carbon capture and storage, carbon pricing, carbon credits, marine permaculture)
- Improved implementation of the Organic Regulation e.g. as regards algae international partnership initiatives
- Effective patents for algae technologies

\* 8.7. What is, in your opinion, the most significant economic impact of introducing regulatory measures? (Multiple options possible)

- Increase in total revenue generated by your organisation
- Decrease in total revenue generated by your organisation
- Increase in total gross value added from the algae sector
- Decrease in total gross value added from the algae sector
-

Impact on the expansion / scale-up of micro- and macroalgae production facilities

- Impact on the market uptake of innovative products
- Increase in market prices
- Decrease in market prices
- Impact on potential competition in the algae sector
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 8.8. What is, in your opinion, the most significant social impact of introducing regulatory measures? (Multiple options possible)

- Increase in employment
- Decrease in employment
- Impact on the attractiveness of the sector (e.g. salaries and how attractive the sector is for people to progress in careers)
- Impact on consumer awareness and acceptance
- Impact on improved availability of health-related products (nutraceuticals, cosmeceuticals, etc)
- Other, please specify

\* Please specify

*1000 character(s) maximum*

\* 8.9. What is, in your opinion, the most significant environmental impact of introducing regulatory measures? (Multiple options possible)

- Impact on CO<sub>2</sub> and nutrients captured - bioremediation potential of algae
- Impact on the biodiversity
- Impact on the improved environmental footprint of algae-based industrial products (e.g. bio-based polymers, surfactants, etc) vs. fossil counterparts.
- Impact on reduction of the environmental footprint of production
- Impact by replacement of current products with more environmentally friendly alternatives (e.g. proteins from algae instead of soy)
-

Other, please specify

\* Please specify

*1000 character(s) maximum*

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