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# Horizon Europe First Strategic Plan 2021-2024

Fields marked with \* are mandatory.

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## INTRODUCTION

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**Horizon Europe**, the ninth European Research and Innovation Framework programme (2021-2027), is the key instrument of the Union for supporting research and innovation. It also plays an important role in steering and accelerating Europe's recovery, preparedness and resilience along the twin digital and green transitions. It will strengthen our knowledge base through frontier research, spur breakthrough innovation and support the development and demonstration of innovative solutions, and it will help restore our industrial leadership and strategic autonomy, while helping tackle the coronavirus pandemic and the climate challenges.

**The first Horizon Europe Strategic Plan** will define the strategic orientations for our research and innovation investments over the period 2021-2024 and will act as a compass to stay on course with the political priorities of the Commission: a climate-neutral and green Europe, fit for the digital age, where the economy works for the people.

This **survey is part of the strategic planning process**, to which the European Parliament, EU Member States, Countries of the European Economic Area (EEA Countries), as well as stakeholders and interested citizens, contribute collectively.

The **objective of this survey** is to receive feedback on the expected impacts to be targeted by research and innovation within Horizon Europe and the contribution of Research and Innovation (R&I) investments to the EU's political priorities. The results of the survey will be used to finalise the Strategic Plan and to precise the impact logic, which will set the direction for to the future Horizon Europe work programmes.

The survey is structured around **six Horizon Europe clusters and their expected impacts**: 1. Health; 2. Culture, Creativity and Inclusive Society; 3. Civil Security for Society; 4. Digital, Industry and Space; 5. Climate, Energy and Mobility; 6. Food, Bioeconomy, Natural Resources, Agriculture and Environment.

You do not have to respond to all six clusters. It should take **about 20 minutes to reply to the questions for each cluster**. The **deadline is Friday, 18 September 2020, 18.00 Brussels time**.

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## ABOUT YOU

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\*Have you or your organisation participated in the web-survey "Horizon Europe Co-design 2021-2024" in July 2019?

Yes

No

You or your organisation are mainly active/interested in the following areas of Horizon Europe (please select all that apply):

- Health (cluster 1)
- Culture, creativity and inclusive society (cluster 2)
- Civil security for society (cluster 3)
- Digital, industry and space (cluster 4)
- Climate, energy and mobility (cluster 5)
- Food, bioeconomy, natural resources, agriculture and environment (cluster 6)
- Widening Participation and Strengthening the European Research Area
- Pillar I - Excellent Science
- Pillar III - Innovative Europe
- Other

You are responding:

- As an individual
- As a representative of a single organisation
- As a representative of an 'umbrella' organisation (a group of organisations)

You are responding:

- As a researcher
- As an entrepreneur
- As an expert in research and innovation
- A citizen
- Other

You are representing:

- Yourself
- A university or similar institution
- A research organisation
- A business or an industry
- An international organisation
- A national public authority
- A regional or local public authority
- A civil society organisation (including non-governmental organisations, community associations, etc.)
- Other

Name of the organisation:

*150 character(s) maximum*

European Office of the Metropolitan Region FrankfurtRheinMain

Your name and last name:

*150 character(s) maximum*

Susanna Caliendo, Head of Office

What is your country of residence or establishment?

Germany

Please select the option that best describes your interest in European research and innovation programmes:

- I/my organisation is currently participating in at least one project funded by a European Union research and innovation framework programme
- I/my organisation has proposed and/or participated in project(s) funded by a European Union research and innovation framework programme in the past, but I am/it is not participating in a running projects at this moment
- I/my organisation has not yet proposed or participated in projects funded by European Union research and innovation framework programmes, but would be interested to do so
- I/my organisation currently does not intend to propose and/or participate in projects funded by European Union research and innovation framework programmes, but I may be interested in the results of the projects/programme

### **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 your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published
- Public:** Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution

Please have a look at our Privacy Statement.

[Privacy\\_statement\\_RTD\\_consultations.pdf](#)

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## **EXPECTED IMPACTS AND R&I CONTRIBUTION**

This section aims at validating the targeted impacts and the role of R&I to reach the impact for the four years covered by the Strategic Plan, as developed with stakeholders during the Strategic Planning Process. This survey builds upon last year's survey and aims at making final revisions.

You would like to provide your views on the following Horizon Europe clusters:

*at least 1 choice(s)*

- Cluster 1 : Health
- Cluster 2 : Culture, Creativity and Inclusive Society
- Cluster 3 : Civil Security for Society
- Cluster 4. Digital, Industry and Space
- Cluster 5. Climate, Energy and Mobility
- Cluster 6. Food, Bioeconomy, Natural Resources, Agriculture and Environment

## CLUSTER 4: Digital, Industry and Space

### **Impact 1: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures**

**Short description of the impact:** Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures (networks, data centres), through innovative production and manufacturing processes and their digitisation, new business models, sustainable-by-design advanced materials and technologies enabling the switch to decarbonisation in all major emitting industrial sectors, including green digital technologies

**R&I contribution:** The pressing need to tackle a number of sustainability challenges, notably climate change, creates opportunities supporting economies, industries and the environment while also reducing dependencies by shortening and diversifying supply chains. New technologies, including digital technologies will enable industry to reduce energy consumption, decarbonise production processes, and protect the environment. A more agile and more circular economy will make Europe less dependent on external imports, boosting its resilience.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

### **Impact 2: Globally attractive, secure and dynamic data-agile economy**

**Short description of the impact:** Globally attractive, secure and dynamic data-agile economy by developing and enabling the uptake of the next-generation computing and data technologies and infrastructures (including space infrastructure and data), enabling the European single market for data with the corresponding data spaces and a trustworthy artificial intelligence ecosystem.

**R&I contribution:** Data becomes the new fuel of the economy and a key asset to address Europe's societal challenges. It will reshape the way we produce, consume and live. It is the basis for many new products and services, driving productivity and resource efficiency gains across all sectors of the economy. Currently, a small number of Big Tech firms hold a large part of the world's data. But as the volume of data produced in the world is growing rapidly, enormous opportunities lie ahead. In order to

release its potential, Europe has to find its way and develop the data technologies for sharing, re-using processing, combining, modelling and analysing large amounts of data, while preserving high privacy, security, safety and ethical standards.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

The described impact and R+I-contribution are not only relevant for the economy/private sector but also for public authorities and innovative digital public services.  
Please do not use the term "ecosystem" to describe structures which aren't ecosystems ("artificial intelligence ecosystem").

### **Impact 3: Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials**

**Short description of the impact:** Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials, achieved through breakthrough technologies in areas of industrial alliances, dynamic industrial innovation ecosystems and advanced solutions for substitution, resource and energy efficiency, effective reuse and recycling and clean primary production of raw materials, including critical raw materials.

**R&I contribution:** Access to primary and secondary raw materials, in particular critical raw materials, will remain a vital prerequisite for both Europe's strategic security and a successful transition to a climate-neutral and circular economy. Europe must accelerate the maturity level of key digital and enabling technologies and support their adoption in industrial value-chains and strategic sectors such as automotive, industrial manufacturing, energy intensive industries, energy sectors, aerospace, defence and security, and healthcare.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

#### **Impact 4: Sovereignty in digital technologies and in future emerging enabling technologies**

**Short description of the impact:** Sovereignty in digital technologies and in future emerging enabling technologies by strengthening European capacities in key parts of digital and future supply chains, allowing agile responses to urgent needs, and by investing in early discovery and industrial uptake of new technologies.

**R&I contribution:** Despite a still strong presence in digital vertical markets (such as business software) and industrial applications (like sensor and control, car electronics, manufacturing and telecom equipment), Europe increasingly depends on other regions for its key digital capacities such as digital components, computing systems, data infrastructure and web platforms. At the same time, progress in data analytics and Artificial Intelligence, the deployment of faster networks (5G and beyond), new computing and data processing paradigms such as edge computing and quantum computing, as well as the increased demand for security and trust as fundamental prerequisites for digital solutions, present enormous opportunities for European industry to reinforce and regain leadership across the digital supply chain. Where relevant, security and trust will be fostered through open source solution, for both software and hardware. It is also indispensable to be first-movers in strategic areas such as quantum computing and graphene, and to establish early European leadership in emerging enabling technologies.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

## **Impact 5: Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data**

### **Short description of the impact:**

Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data, by reinforcing the EU's independent capacity to access space, and securing the autonomy of supply for critical technologies and equipment.

**R&I contribution:** Europe enjoys access to its own world-leading space and ground infrastructure, services and applications for navigation and Earth observation, supporting a range of EU and global policies and enabled by a competitive industrial sector active in development of new satellites and launch systems as well as in space science and exploration. However, technological development and markets move rapidly while important export destinations remain, to a large extent, captive markets supported by civil and military institutional demand. Europe must thus mobilise to remain competitive, to secure its future independent access to space and ability to operate securely in space, and to reduce its dependence on non-EU suppliers of technologies and services while at the same time prepare for a future space ecosystem of increasingly autonomous AI-enabled and flexible spacecraft and an increasingly congested space environment. In addition, it should foster EU competitiveness, respond to user needs for Earth environment monitoring, global Positioning Navigation and Timing (PNT), communication and security. Europe shall make the most of the synergies of its Space and Digital programmes, for example to increase the exploitation of the vast quantities of data collected by Copernicus, through HPC and AI enabled infrastructures.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

## **Impact 6: A human-centred and ethical development of digital and industrial technologies**

**Short description of the impact:** A human-centred and ethical development of digital and industrial technologies, through a two-way engagement in the development of technologies, empowering end-users and workers, and supporting social innovation.

**R&I contribution:** As Europe takes the lead in the green and digital transition, workers, regions, and

societies are faced with extremely fast transformations, and will be differently affected by these changes. The COVID-19 crisis illustrated to strengthen resilience which entails a human-centred and ethical dimension. The rapid adoption of new technologies offers an immense potential for improved standards of living, safer mobility, better healthcare, new jobs, or the personalisation of public services. At the same time, it presents risks such as skills mismatches, digital divides, user lock-in, or serious breaches of security or privacy. Developments in industry, in digital and enabling technologies should enhance trust and reflect values such as the rule of law, cooperation, inclusiveness and respect for the environment. They have the potential to enhance social inclusion, can inform up-skilling training programmes and ensure a two-way engagement with society with regard to developing technologies.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

Do you have any other comments regarding the expected impacts of this Cluster?

*1,500 character(s) maximum*

## CLUSTER 4 - COHERENCE AND SYNERGIES

### **Coherence and synergies with other parts of the Framework Programme or with other EU programmes**

In order to maximise the impact of research and innovation on society, environment and economy at large and to contribute to the achievement of the Union's objectives, Union funding programmes must be coherent and work in synergy. Synergies and coherence are based on complementarity between programme design and objectives, as well as financing rules and processes at implementation level.

The Strategic Planning process, and the ensuing implementation process, must ensure the alignment of priorities of the different parts of Horizon Europe and between Horizon Europe and other EU funding programmes, ensuring coherent funding options at different stages of the research and innovation cycle. This includes facilitating the deployment of research results and innovative solutions developed in Horizon Europe (or previous Framework Programmes) with the support of other Union funding



programmes.

The following questions seek your views on the priorities for coherence and synergies between this cluster of Horizon Europe and other parts of the Horizon Europe, and other EU funding programmes.

## Horizon Europe Structure



**Missions** shall be programmed within the **Pillar II**, 'Global Challenges and European Industrial Competitiveness', but may also benefit from actions carried out within other parts of the Programme as well as complementary actions carried out under other Union funding programmes.

Horizon Europe Missions are an integral part of the Horizon Europe framework programme. Missions are programmed under Horizon Europe Pillar II. Missions implementation will go beyond research and innovation. Missions will benefit from actions carried out within other parts of the Programme as well as complementary actions carried out at national level and under other Union funding programmes. Each selected mission will be a mandate to solve a pressing challenge in society within a certain timeframe and budget. More information on Missions is available on the Missions website ([https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe\\_en](https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe_en)).

1. In your view, how important is coherence between this cluster and other clusters or elements of Horizon Europe Pillar II?

	Very important	Important	Neutral	Not important	Not important at all
Pillar II – Cluster 1 'Health'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 2 'Culture, Creativity and Inclusive Society'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 3 'Civil Security for Society'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 5 'Climate, Energy and Mobility'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pillar II – Cluster 6 'Food, Bioeconomy, Natural Resources, Agriculture and Environment'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Cancer'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Adaptation to climate change including societal transformation'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Healthy oceans, seas coastal and inland waters'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Climate-neutral and smart cities'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Soil health and food'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. In your view, how important is coherence between this cluster and the other parts of Horizon Europe?

	Very important	Important	Neutral	Not important	Not important at all
Pillar I – Excellent Science: European Research Council	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I - Excellent Science: Marie-Skłodowska Curie Actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I – Research Infrastructures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Council	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Ecosystems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Institute of Innovation and Technology	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Widening participation and spreading excellence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reforming and enhancing the European R&I system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. In your view, how important are synergies between this cluster and the following other EU funding programmes?

	Very important	Important	Neutral	Not important	Not important at all
Innovation Fund under the Emission Trading Scheme (the 'Innovation Fund')	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

European Regional Development Fund (ERDF)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Defence Fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
InvestEU	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creative Europe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Agricultural Fund for Rural Development (EAFRD)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Single Market Programme	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Space Programme	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neighbourhood, Development and International Cooperation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Social Fund Plus (ESF+)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Agricultural Guarantee Fund (EAGF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Digital Europe Programme (DEP)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connecting Europe Facility (CEF)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other [Note: A field for comments opens at the end of the list, when you select the level of importance]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Programme for Environment and Climate Action (LIFE)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Euratom Research and Training Programme	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Border Management and Visa Instrument (BMVI) as part of the Integrated Border Management Fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Internal Security Fund (ISF)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erasmus Programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Maritime and Fisheries Fund (EMFF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

4. Do you have any other comments or suggestions regarding the expected potential of coherence or synergies with Horizon Europe?

*1,500 character(s) maximum*

## CLUSTER 5: Climate, Energy and Mobility

## **Impact 1: A climate-neutral and resilient society and economy**

**Short description of the impact:** Transition to a climate-neutral and resilient society and economy enabled through advanced climate science, pathways and responses to climate change (mitigation and adaptation) and behavioral transformations.

**R&I contribution:** Advancing climate science and creating a user-centric knowledge base remain essential to catalyze the global transition to a climate neutral and resilient economy. Addressing this challenge will involve research that furthers our understanding of the changing climate and its implications, closes knowledge gaps (as identified in IPCC reports), develops the tools that support decision makers for mitigation and adaptation actions on various time and spatial scales, and evaluates the societal impact of climate change and the technologies required for a low-carbon transition.

The first objective is to accelerate climate action (both mitigation and adaptation) uptake globally in line with the Paris Agreement and the SDGs, by improving knowledge of the earth system under different socio-economic pathways, estimating the impacts of climate change and by designing and evaluating solutions and pathways for mitigation and adaptation and related social transformation. The second objective is to contribute substantially to key international assessments such as the Intergovernmental Panel on Climate Change (IPCC). The third objective is to strengthen the European research area on climate change.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

## **Impact 2: Clean and sustainable transition of the energy and transport sectors towards climate neutrality**

**Short description of the impact:** Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative cross-cutting solutions.

**R&I contribution:** Many challenges of the energy and transport sectors are closely interlinked and must be addressed in a holistic approach, including with regard to their implications for citizens and society and making use of the social sciences and the humanities (SSH). As regards batteries, R&I activities will develop more performant, sustainable and circular battery technologies according to sectoral needs, thereby sustaining a competitive and sustainable EU battery value chain. With a view to hydrogen, a

global leadership role of European industry along a competitive near-zero carbon hydrogen supply chain will be supported with R&I actions targeting improved efficiency, cost, performance, safety and environmental footprint of hydrogen and fuel cell technologies. Synergies and collaboration between these cross-sectoral solutions and their application in down-stream sectoral R&I in energy, transport and industry will be ensured. In addition, emerging and break-through technologies with a high potential for decarbonising the energy and transport sector will be supported.

More than 80% of the EU's population live in urban areas – R&I actions will provide concrete solutions for urban energy and mobility systems, thereby increasing the overall energy and resource efficiency as well as the climate-resilience of Europe's cities and communities and their attractiveness to businesses and citizens in a holistic fashion. The low-carbon transition will however only succeed if citizens accept and engage in it – R&I actions will investigate more effective ways to involve citizens, in particular through the Mission on Climate-neutral Cities.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

### **Impact 3: More efficient, clean, sustainable, secure and competitive energy supply**

**Short description of the impact:** More efficient, clean, sustainable, secure and competitive energy supply through new solutions for smart grids and energy systems based on more performant renewable energy solutions.

**R&I contribution:** The transition of the energy system will rely on reducing the overall energy demand and decarbonising the energy supply side. R&I actions will make the energy supply side cleaner, more secure, and competitive by boosting cost performance and reliability of a broad portfolio of renewable energy solutions, in line with societal needs and preferences. Furthermore, R&I activities are needed to underpin the modernisation of the energy networks to support energy system integration, including the progressive electrification of demand side sectors (buildings, mobility, industry) and integration of other decarbonised energy carriers, such as clean hydrogen. Innovative energy storage solutions (including chemical, mechanical, electrical and thermal storage) are a key element of such energy system and R&I actions will advance their technological readiness for industrial-scale and domestic applications. Carbon Capture, Utilisation and Storage (CCUS) is a CO<sub>2</sub> emission abatement option that holds great potential and R&I actions will accelerate the development of CCUS in electricity generation and industry applications.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

#### **Impact 4: Efficient and sustainable use of energy, accessible for all**

**Short description of the impact:** Efficient and sustainable use of energy, accessible for all is ensured through a clean energy system and a just transition.

**R&I contribution:** Fostering demand side solutions and improving energy efficiency are among the most cost effective ways to support decarbonisation, to create inclusive growth and employment in Europe, to bring down costs for consumers, to reduce our import dependency and redirect investments towards smart and sustainable infrastructure.

Buildings are pivotal to the energy transition and the achievement of a climate neutral economy and R&I actions will facilitate cost-effective energy renovation of buildings, thereby delivering energy savings, better life-cycle resource efficiency, and a more synergetic interactions of buildings with the energy system and between buildings. Furthermore, R&I is needed to scale the positive impacts from building level to the much more complex district and city level where a maximum of synergies can be achieved, involving citizens and different levels of government. As regards industry, efficient use of decarbonised energy will be optimised at all levels, with a focus on the integration of renewable and low-carbon energy sources and the optimisation of energy flows across integrated industrial installations and the wider energy system.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

## **Impact 5: Climate-neutral and environmental friendly mobility**

**Short description of the impact:** Towards climate-neutral and environmental friendly mobility through clean solutions across all transport modes while increasing global competitiveness of the EU transport sector.

**R&I contribution:** The transport sector is responsible for 23% of CO<sub>2</sub> emissions and remains dependent on oil for 92% of its energy demand. While there has been significant technological progress over past decades, projected GHG emissions are not in line with the objectives of the Paris Agreement due to the expected increase in transport demand. Intensified research and innovation activities are therefore needed, across all transport modes and in line with societal needs and preferences, in order for the EU to reach its policy goals towards a net-zero greenhouse gas emissions by 2050 and to reduce significantly air pollutants.

As regards road transport, R&I actions will contribute to the transformation to zero-emission mobility ensuring that Europe remains world leader in innovation, production and services in relation to road transport. The rail system will be supported with R&I action in its transformation focussing on decarbonisation, automation and digitalization. R&I action on aviation will develop enabling and integrated aircraft technologies for deep decarbonisation transformation, reducing all aviation impacts and emissions, and strengthening European aero-industry collaboration and industrial leadership position. With a view to waterborne transport, R&I actions will advance zero-emission solutions in the shipping sector, improve its system efficiency, enhancing digital and EU satellite-navigation solutions and contribute to its competitiveness. To reduce the negative impact of transport on environment and the human health, R&I actions will help to devise more effective ways of reducing emissions and their impacts.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

Extend the impact description to "clean solutions across and between all transport modes" - making clear that innovations towards that aim do not only have to take place (technologically) within the respective transport sectors, but also with regard to enhanced multimodality, a modal shift away from IMT and a general transport volume reduction (e.g. via innovative integrated governance and planning solutions in the functional urban and peri-urban area).

## **Impact 6: Safe, seamless, smart, inclusive, resilient and sustainable mobility systems**

**Short description of the impact:** Safe, seamless, smart, inclusive, resilient and sustainable mobility systems for people and goods thanks to user-centric technologies and services including digital technologies and advanced satellite navigation services.

**R&I contribution:** Europe needs to maintain the competitiveness of its transport industry and manage the transformation of supply-based transport to demand-driven, safe and sustainable mobility services for passenger and freight. Suitable research and innovation initiatives will help to prepare such transformation. Emerging digital technologies and advanced satellite navigation services (Galileo/EGNOS) provide a great potential for developing connected and automated transport and managing traffic across the whole transport network. It can enable significant safety, environmental, economic and social benefits by reducing accidents, traffic congestion, energy consumption and emissions of vehicles and logistics networks while increasing efficiency and productivity of operations and improving working conditions.

To succeed in this transformation, Europe's ageing (and not always sustainable) transport infrastructure needs to be prepared for enabling cleaner and smarter operations.

Research and innovation results will set the basis for future standards and regulatory framework, creating European and global markets. To maximise societal, environmental and economic benefits, in addition to technological solutions, it is essential to address human and social aspects such as: analysis of mobility factors and patterns (for both passenger and freight transport), representations of different social groups and inclusiveness of new solutions, data privacy concerns, capacity building and public acceptance, etc.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?



500 character(s) maximum

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Do you have any other comments regarding the expected impacts of this Cluster?

1,500 character(s) maximum

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## CLUSTER 5 - COHERENCE AND SYNERGIES

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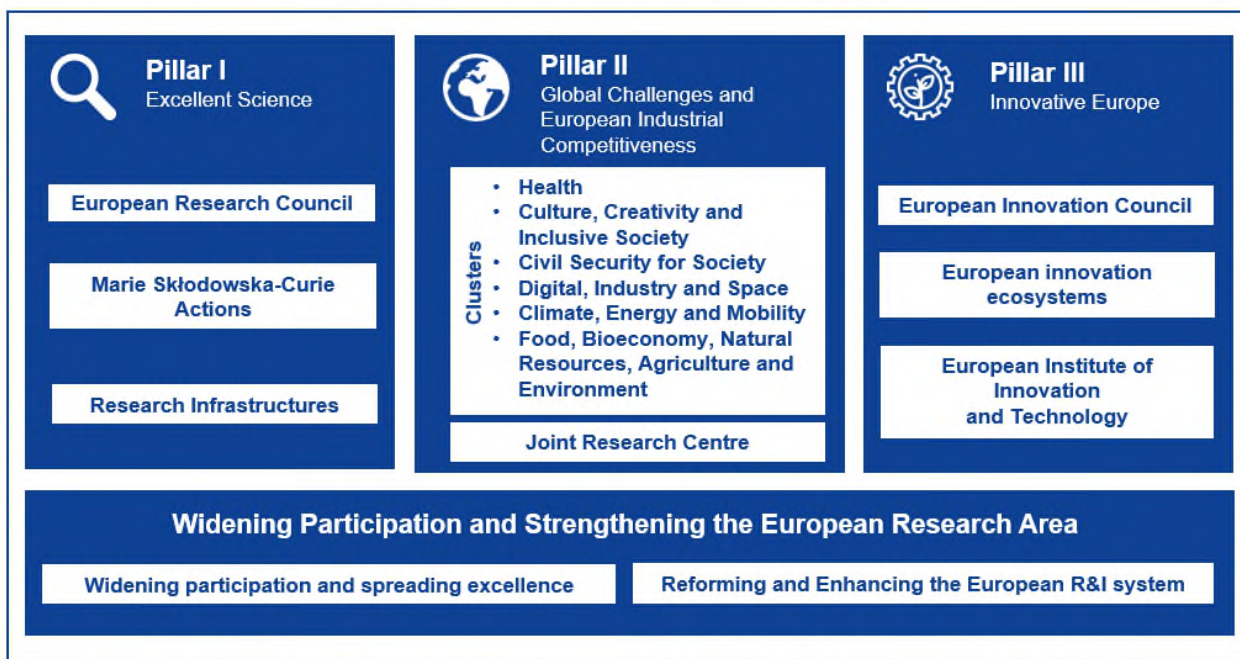
### **Coherence and synergies with other parts of the Framework Programme or with other EU programmes**

In order to maximise the impact of research and innovation on society, environment and economy at large and to contribute to the achievement of the Union's objectives, Union funding programmes must be coherent and work in synergy. Synergies and coherence are based on complementarity between programme design and objectives, as well as financing rules and processes at implementation level.

The Strategic Planning process, and the ensuing implementation process, must ensure the alignment of priorities of the different parts of Horizon Europe and between Horizon Europe and other EU funding programmes, ensuring coherent funding options at different stages of the research and innovation cycle. This includes facilitating the deployment of research results and innovative solutions developed in Horizon Europe (or previous Framework Programmes) with the support of other Union funding programmes.

The following questions seek your views on the priorities for coherence and synergies between this cluster of Horizon Europe and other parts of the Horizon Europe, and other EU funding programmes.

# Horizon Europe Structure



**Missions** shall be programmed within the **Pillar II**, 'Global Challenges and European Industrial Competitiveness', but may also benefit from actions carried out within other parts of the Programme as well as complementary actions carried out under other Union funding programmes.

Horizon Europe Missions are an integral part of the Horizon Europe framework programme. Missions are programmed under Horizon Europe Pillar II. Missions implementation will go beyond research and innovation. Missions will benefit from actions carried out within other parts of the Programme as well as complementary actions carried out at national level and under other Union funding programmes. Each selected mission will be a mandate to solve a pressing challenge in society within a certain timeframe and budget. More information on Missions is available on the Missions website ([https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe\\_en](https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe_en)).

1. In your view, how important is coherence between this cluster and other clusters or elements of Horizon Europe Pillar II?

	Very important	Important	Neutral	Not important	Not important at all
Pillar II – Cluster 1 'Health'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 2 'Culture, Creativity and Inclusive Society'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 3 'Civil Security for Society'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 4 'Digital, Industry and Space'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 6 'Food, Bioeconomy, Natural Resources, Agriculture and Environment'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Cancer'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Mission Area 'Adaptation to climate change including societal transformation'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Healthy oceans, seas coastal and inland waters'	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Climate-neutral and smart cities'	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area 'Soil health and food'	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. In your view, how important is coherence between this cluster and the other parts of Horizon Europe?

	Very important	Important	Neutral	Not important	Not important at all
Pillar I – Excellent Science: European Research Council	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I - Excellent Science: Marie-Sklódowska Curie Actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I – Research Infrastructures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Council	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Ecosystems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Institute of Innovation and Technology	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Widening participation and spreading excellence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reforming and enhancing the European R&I system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. In your view, how important are synergies between this cluster and the following other EU funding programmes?

	Very important	Important	Neutral	Not important	Not important at all
Internal Security Fund (ISF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Space Programme	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Social Fund Plus (ESF+)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Euratom Research and Training Programme	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Regional Development Fund (ERDF)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [Note: A field for comments opens at the end of the list, when you select the level of importance]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Border Management and Visa Instrument (BMVI) as part of the Integrated Border Management Fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Connecting Europe Facility (CEF)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Europe Programme (DEP)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Agricultural Guarantee Fund (EAGF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Creative Europe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
InvestEU	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erasmus Programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Agricultural Fund for Rural Development (EAFRD)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Programme for Environment and Climate Action (LIFE)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovation Fund under the Emission Trading Scheme (the 'Innovation Fund')	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neighbourhood, Development and International Cooperation	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Defence Fund	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Maritime and Fisheries Fund (EMFF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Single Market Programme	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Do you have any other comments or suggestions regarding the expected potential of coherence or synergies with Horizon Europe?

*1,500 character(s) maximum*

## CLUSTER 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment

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### **Impact 1: Climate neutrality**

**Short description of the impact:** Climate neutrality is achieved by reducing GHG emissions, maintaining natural carbon sinks, and enhancing the sequestration and storage of carbon in ecosystems, including by unfolding the potential of nature based solution, production systems on land

and at sea as well as rural and coastal areas, where adaptations to climate change are also being fostered.

**R&I contribution:** Cluster 6 has the potential to deliver significantly on EU climate objectives by accelerating systemic changes. Thanks to R&I the climate mitigation and adaptation potential of ecosystems, primary production systems on land and at sea as well as in food and bio-based systems will be better understood and seized. Innovative production, transformation, distribution consumption and waste management systems will lead to the reduction of GHG emissions in primary and secondary production, notably in agriculture, food and bio-based systems. Innovative approaches will enable maintaining natural carbon sinks and enhance capture and storage functions provided by ecosystems, including soils (in particular organic soils), forests and oceans, primary production systems (e.g., carbon farming and agroforestry) as well as sustainable bio-based industry and products. R&I will also foster adaptation to the impacts of climate change. It will allow resource efficiency and sustainable cascading use of biomass. The ocean-climate nexus will be better understood. R&I will support monitoring, risk-based assessment and forecasting capacities including sea-level rise, and adaptation solutions to extreme sea level events and coastal hazards.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

## **Impact 2: Biodiversity decline is halted**

**Short description of the impact:** Biodiversity in Europe is back on a path of recovery by 2030, and ecosystems and their services are preserved and sustainably restored on land, inland water and at sea through improved knowledge and innovation.

**R&I contribution:** Although transformative changes could bend the curve of biodiversity loss, they are currently not happening sufficiently quickly, widely or systemically, requiring the increased mobilization of R&I and all actors. R&I will be used to better observe, understand, monitor, value, restore and manage biodiversity and ecosystem services. Innovative solutions will be designed, up-scaled and implemented, to reverse ecosystems degradation and biodiversity decline, including of pollinators, corals, etc. R&I will also improve conservation, management and use of plant, animal, fungal and microbial genetic resources, thereby preserving and enhancing biodiversity in natural and primary production systems (including agriculture, forestry, aquaculture and fisheries), environmental applications and biodiscovery. Direct and indirect drivers of biodiversity loss will be tackled, and transformative change promoted in all

sectors and societal aspects, notably by using natural capital accounting. European R&I will increase its contribution to biodiversity science and policy at European and global level.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

### **Impact 3: Sustainable and circular management and use of natural resources**

**Short description of the impact:** Sustainable and circular management and use of natural resources as well as prevention and removal of pollution are mainstreamed, unlocking the potential of the bioeconomy, ensuring competitiveness and guaranteeing healthy soil, air, fresh and marine water for all, through better understanding of planetary boundaries and deployment of innovative technologies and other solutions, notably in primary production, forestry and bio-based systems.

**R&I contribution:** Physical and biological planetary boundaries and flows will be better understood and defined, notably in relation to the use and management of natural resources. Innovative solutions for a minimised, circular use of resources and the mainstreaming of circular systems, including at local and regional levels, to increase resource efficiency along and across value chains will be developed, tested and demonstrated. Attention will be given to prevention and mitigation of pollution, including with nutrients, pesticides, plastics and emerging contaminants, towards clean seas and oceans, water, soil and air. The innovative, safe circular approaches, implemented through adequate business models, will ensure competitiveness and contribute to increased and fairly distributed added-value along and across value chains as well as to more attractive jobs in areas which are more socially and economically disadvantaged (e.g. rural areas), especially in the context of the post-COVID-19 pandemic. Innovative circular approaches will enable sustainable management of soil, water resources and nutrients, enhance their value, allow to better cope with the impacts of floods and droughts and reduce the high economic costs related to soil remediation and water pollution prevention, control and removal. R&I will benefit also sustainable forest management and the delivery of multiple forest products and services. Innovative bio-based solutions will unlock the potential of sustainable bioeconomy and replace fossil – based, carbon intensive and harmful materials with innovative, climate-neutral, bio-based, circular, non-toxic materials and chemicals.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

#### **Impact 4: Food and nutrition security for all**

**Short description of the impact:** Food and nutrition security for all within planetary boundaries is ensured through knowledge, innovation and digitalisation in agriculture, fisheries, aquaculture and food systems, which are sustainable, resilient, inclusive, safe and healthy from farm to fork.

**R&I contribution:** R&I will be a key driver in accelerating the transition to sustainable, low ecological footprint, healthy and inclusive food system from primary production to consumption. Farmers will be empowered to manage land, soil, water and nutrients in sustainable ways, reduce the use of pesticides and antimicrobials as well as excess fertilisation and to move towards more climate and environment-friendly and resilient agriculture systems. The fish and seafood production will rely on more sustainable fisheries and aquaculture, including with novel foods. Key research areas include governance, AKIS, agroecology, organic farming and diversified farming systems, low trophic aquaculture, plant and animal health (including One-Health approach), animal nutrition, animal welfare, the microbiome, alternative proteins for sustainable agriculture and dietary shift, feed and food safety and traceability, personalised nutrition, prevention and reduction of food losses and waste, and urban food systems transformation. Innovative, climate smart, deforestation free, and sustainable food value chains with balanced power relations will ensure access to a sufficient supply of affordable food to citizens including when facing crisis situations. R&I will advance solutions to shift to sustainable healthy diets. Efforts to boost digitalisation based on fair data economy in agriculture, fisheries, aquaculture, and at the food system level will foster the development of tailored digital technology-based solutions enabling sustainability and transparency, as well as enhance data generation capacities and enhance databases increasing their effectiveness.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

### **Impact 5: Sustainable development of rural, coastal and urban areas is achieved**

**Short description of the impact:** Rural coastal and urban areas are developed in a sustainable, balanced and inclusive manner thanks to a better understanding of the environmental, socio-economic, behavioural and demographic drivers of change as well as deployment of digital, social and community-led innovations.

**R&I contribution:** The differential impacts of climate, environmental, socio-economic and demographic changes on rural, coastal and urban areas, will be better understood and turned into equal opportunities for people wherever they live, enhancing territorial cohesion. Transdisciplinary R&I with a strong social sciences dimension will improve understanding of the behaviours and values of producers, consumers and all other actors, with attention to the gender aspects. People will have also more equitable access to knowledge and skills required for making informed choices and being actively engaged in sustainable management of natural resources, from production to consumption and disposal. Rural, coastal and urban communities, in particular women and the most vulnerable groups and those hit hardest by the COVID-19 pandemic, will see their labour conditions, quality of life, access to services and long-term socio-economic prospects in the context of major transitions and rising health threats improved. Their capacity to drive community-led innovations will be enhanced. Mobilising the forces of digital transformation, nature-based solutions, as well as social and policy innovation will facilitate those changes and support smart, environment friendly, climate-neutral and resilient lifestyles. In marine and coastal environments, emphasis will be put on ecosystem protection, climate adaptation and resilience.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum



Include "peri-urban" into the impact description, as challenges on the way to a more sustainable development of all European territories are often linked to structures and interdependencies in functional areas which show neither exclusively rural nor exclusively urban characteristics.

## **Impact 6: Established Innovative governance models enable sustainability and resilience**

**Short description of the impact:** Innovative governance models enabling sustainability and resilience are established and monitored through enhanced and shared use of new knowledge, tools, foresight, and environmental observations as well as digital, modelling and forecasting capabilities.

**R&I contribution:** R&I will provide strong evidence-based knowledge and tools to support policy design, implementation and monitoring for achieving the necessary transformative changes. Environmental observations will be enhanced and metrics improved, including for ocean exploration, conservation and the digital ocean. Particular efforts will be dedicated to support the development of digital twins of the Earth systems in collaboration with the Destination Earth initiative of the European strategy for data. By supporting better understanding of the impacts of global changes, environmental observations as well as the application of digital and big data technologies to assess socio-economic and environmental aspects, systems and flows will provide solid and reliable information and enable sound decision making and adaptation measures. Moreover, effective knowledge and innovation systems will encourage multi-actor, risk-aware, place-based and community-led innovations to benefit all, from primary producers to consumers. The EU's and international science-policy interfaces will be strengthened with a view to establish governance models fostering sustainable solutions to be applied.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R&I will play an important role to reach this impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text describes well the role of R&I and the ambition of the impact	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Would you like to share an original idea or wording suggestion on this impact?

*500 character(s) maximum*

Do you have any other comments regarding the expected impacts of this Cluster?

*1,500 character(s) maximum*

## CLUSTER 6 - COHERENCE AND SYNERGIES

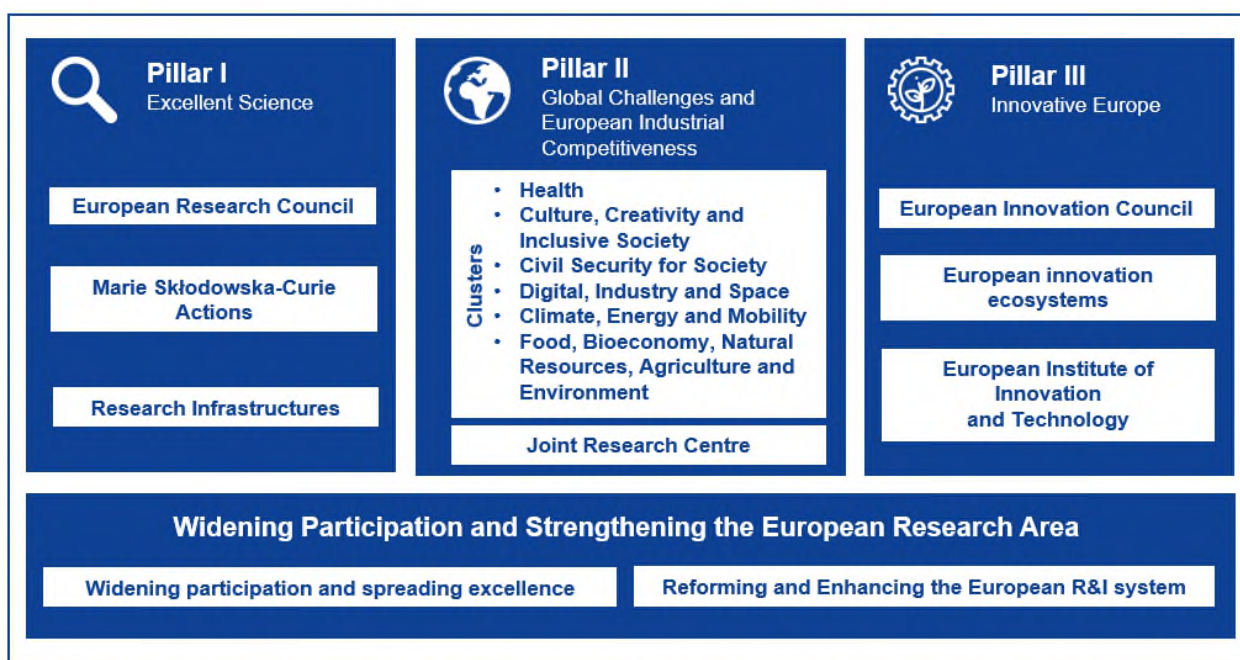
### Coherence and synergies with other parts of the Framework Programme or with other EU programmes

In order to maximise the impact of research and innovation on society, environment and economy at large and to contribute to the achievement of the Union's objectives, Union funding programmes must be coherent and work in synergy. Synergies and coherence are based on complementarity between programme design and objectives, as well as financing rules and processes at implementation level.

The Strategic Planning process, and the ensuing implementation process, must ensure the alignment of priorities of the different parts of Horizon Europe and between Horizon Europe and other EU funding programmes, ensuring coherent funding options at different stages of the research and innovation cycle. This includes facilitating the deployment of research results and innovative solutions developed in Horizon Europe (or previous Framework Programmes) with the support of other Union funding programmes.

The following questions seek your views on the priorities for coherence and synergies between this cluster of Horizon Europe and other parts of the Horizon Europe, and other EU funding programmes.

## Horizon Europe Structure



**Missions** shall be programmed within the **Pillar II**, 'Global Challenges and European Industrial Competitiveness', but may also benefit from actions carried out within other parts of the Programme as well as complementary actions carried out under other Union funding programmes.

Horizon Europe Missions are an integral part of the Horizon Europe framework programme. Missions are programmed under Horizon Europe Pillar II. Missions implementation will go beyond research and innovation. Missions will benefit from actions carried out within other parts of the Programme as well as complementary actions carried out at national level and under other Union funding programmes. Each selected mission will be a mandate to solve a pressing challenge in society within a certain timeframe and budget. More information on Missions is available on the Missions website ([https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe\\_en](https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/missions-horizon-europe_en)).

1. In your view, how important is coherence between this cluster and other clusters or elements of Horizon Europe Pillar II?

	Very important	Important	Neutral	Not important	Not important at all
Pillar II – Cluster 1 ‘Health’	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 2 ‘Culture, Creativity and Inclusive Society’	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 3 ‘Civil Security for Society’	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 4 ‘Digital, Industry and Space’	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar II – Cluster 5 ‘Climate, Energy and Mobility’	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area ‘Cancer’	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area ‘Adaptation to climate change including societal transformation’	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area ‘Healthy oceans, seas coastal and inland waters’	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area ‘Climate-neutral and smart cities’	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mission Area ‘Soil health and food’	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. In your view, how important is coherence between this cluster and the other parts of Horizon Europe?

	Very important	Important	Neutral	Not important	Not important at all
Pillar I – Excellent Science: European Research Council	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I - Excellent Science: Marie-Sklodowska Curie Actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar I – Research Infrastructures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Council	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Innovation Ecosystems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pillar III - Innovative Europe: European Institute of Innovation and Technology	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Widening participation and spreading excellence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reforming and enhancing the European R&I system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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3. In your view, how important are synergies between this cluster and the following other EU funding programmes?

	Very important	Important	Neutral	Not important	Not important at all
European Defence Fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
European Maritime and Fisheries Fund (EMFF)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
InvestEU	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Space Programme	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internal Security Fund (ISF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Euratom Research and Training Programme	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Social Fund Plus (ESF+)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erasmus Programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Innovation Fund under the Emission Trading Scheme (the 'Innovation Fund')	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Agricultural Guarantee Fund (EAGF)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Programme for Environment and Climate Action (LIFE)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Single Market Programme	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Regional Development Fund (ERDF)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creative Europe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Connecting Europe Facility (CEF)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Agricultural Fund for Rural Development (EAFRD)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other [Note: A field for comments opens at the end of the list, when you select the level of importance]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Border Management and Visa Instrument (BMVI) as part of the Integrated Border Management Fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Digital Europe Programme (DEP)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Neighbourhood, Development and  
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4. Do you have any other comments or suggestions regarding the expected potential of coherence or synergies with Horizon Europe?

*1,500 character(s) maximum*

## Contact

Contact Form (/eusurvey/runner/contactform/659c5eea-5f1d-341b-482e-92b53222f619)

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