



# **Co-design towards the first strategic plan for Horizon Europe**

## ***Brief interim report on the web-based consultation***

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*Research and  
Innovation*

### **Introduction**

The implementation of the Horizon Europe Specific Programme shall be facilitated by a multiannual Strategic Plan of research and innovation activities, which will also promote consistency between Horizon Europe work programmes, EU priorities and national priorities.

The Strategic Planning process aims to:

- implement Horizon Europe's programme-level objectives in an integrated manner and provide focus on impact for the Programme overall and coherence between its different pillars;
- promote synergies between Horizon Europe and other Union Programmes, including the [cohesion funds] and the Euratom programme, thus becoming a point of reference for research and innovation in all related programmes across the EU budget and non-funding instruments;
- help to develop and realise EU policy for the relevant areas covered, and complement policy development and implementation in the Member States;
- reduce fragmentation of efforts and avoid duplication and overlaps between funding possibilities;
- provide the frame for linking the direct research actions of the Joint Research Centre and other actions supported under the Programme, including the use of results and data for support to policy;
- ensure a balanced and broad approach to research and innovation, at all stages of development, which is not only limited to fostering frontier research, the development of new products processes and services on the basis of scientific and technological knowledge and breakthroughs, but also incorporates the use of existing technologies in novel applications and continuous improvement and non-technological and social innovation;
- ensure a systemic, cross-disciplinary, cross-sectoral and cross-policy approach to research and innovation in order to tackle challenges while also giving rise to new competitive businesses and industries, fostering competition, stimulating private investments and preserving the level playing field in the internal market;

The result of this Strategic Planning Process shall be set out in a multiannual Strategic Plan (the first one for 2021-2024), for preparing the content of the work programmes, while retaining sufficient flexibility to respond rapidly to new and emerging challenges, unexpected opportunities and crises.

The Strategic Planning Process shall focus in particular on Pillar II 'Global challenges and European industrial competitiveness' and cover also relevant activities in other pillars and the part 'Widening Participation and Strengthening the European Research Area', also in close coordination and synergy with the planning of the KICs of the EIT.

The European Commission ensures early involvement and extensive exchanges with the Member States, and extensive exchanges with the European Parliament, complemented by consultation with stakeholders and the public at large in the desirable frame of a stronger engagement with citizens and civil society in a novel co-design process.

A web-based consultation for comments from all interested parties has been launched in view of the preparation of the first strategic plan, based on a supporting ('Orientations')

document: [https://ec.europa.eu/research/pdf/horizon-europe/ec\\_rtd\\_orientations-towards-the-strategic-planning.pdf](https://ec.europa.eu/research/pdf/horizon-europe/ec_rtd_orientations-towards-the-strategic-planning.pdf)

The co-design process includes so far thus two main phases:

- The web-based consultation, open from 28 June to 4 October 2019;
- The Research and Innovation Days on 24, 25 and 26 September 2019.

The main indications from responses gathered up to 8 September are presented below in five chapters:

- The first chapter presents the methodology of the web consultation;
- The second chapter outlines the main profiles and areas of interest of the respondents in Horizon Europe;
- The third chapter highlights the main preferences and messages received from the respondents on the targeted impacts of the six clusters of Horizon Europe;
- The fourth chapter gives indications on the different cross-cutting issues mentioned by the legal basis as particularly relevant for the elaboration of the strategic plan;
- The fifth chapter presents links between the answers received and the [political guidelines](#) of President-elect Ursula von der Leyen.

## **1 Methodology of the web based consultation**

The web-based consultation has been designed through an EU survey questionnaire, structured in four sections (about you ; where should Horizon Europe play its greatest role? ; what kind of impacts should Horizon Europe should target? ; More in detail on the Orientations document) and is composed in total of 20 questions, both closed and open.

The questions refer to the possible contributions of Horizon Europe to the political priorities of the European Union, as well as to the possible impacts that Horizon Europe should target during its first four years of activity (2021-2024), in line with its legal basis.

To provide a level playing field among all respondents and to facilitate the broadest ownership of Horizon Europe, a supporting ('Orientations') document has been published with the consultation.

The Orientations document represents the outcome of the first phase of the co-creation of Horizon Europe implementation among all Commission services. This is meant to facilitate the co-design of the strategic plan between the European Commission, the European Parliament, Member States and the broadest possible number of Research and Innovation stakeholders.

The answers to the survey will be assessed by the Commission services, in co-creation. They will be harnessed to optimise the organisation of the co-design activities during the Research and Innovation Days, both in the village and in the relevant policy conferences, including the co-design sessions.

The results presented in this interim report take into account the first 6015 responses received from the launch of the survey on 28 June 2019 until 8 September 2019). Almost 90% of the respondents are based in one of the 28 Member States of the European Union or in one of the three Countries of the EEA (Iceland, Lichtenstein, Norway).

Due to the significant interest shown both in this [web-based co-design exercise](#) and in the Research and Innovation Days, the closing date of this web-consultation has been extended until 4 October 2019, which is the closing day of a parallel web consultation on the [implementation strategy of Horizon Europe](#).

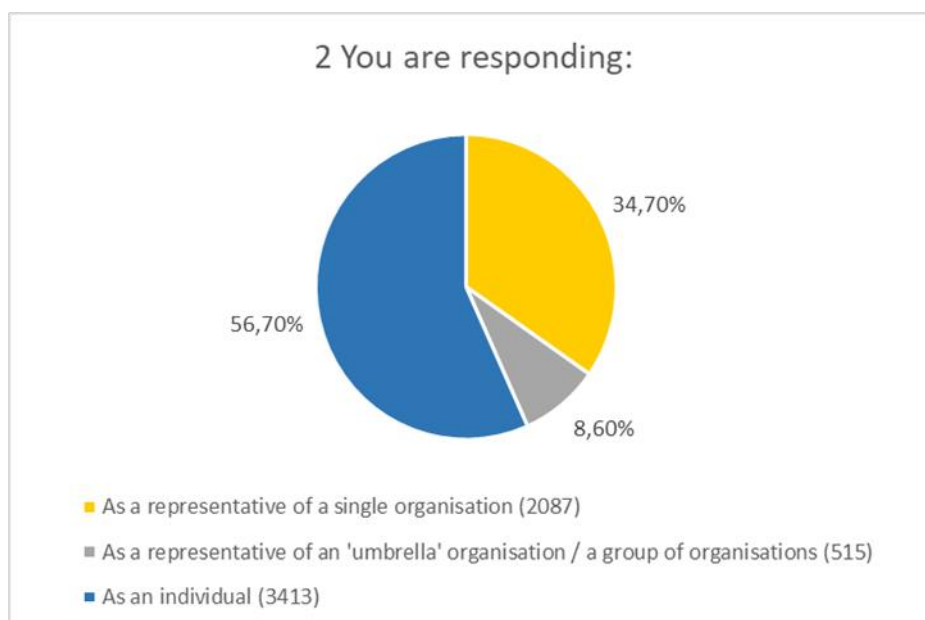
## **2 Presentation of the respondents' profile**

This section takes into consideration only answers given to section - A (about you) of the questionnaire.

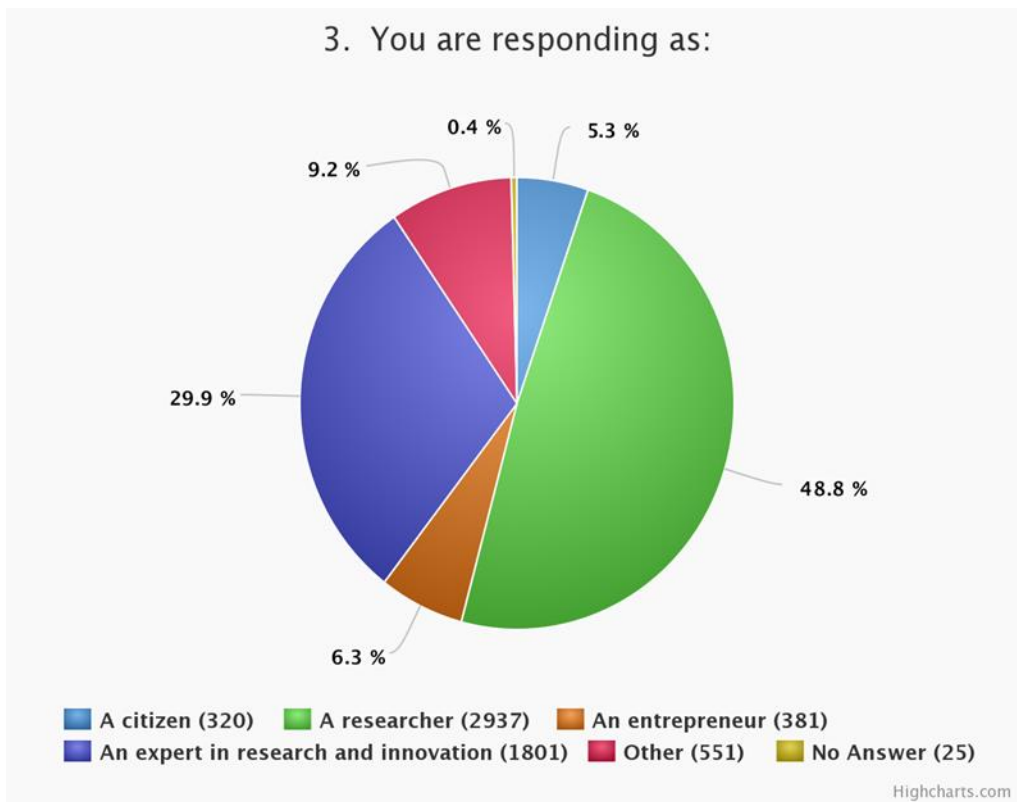
The replies provide an indication about: (i) the identity of respondents, (ii) their acquaintance and participation patterns in the European Union Research and Innovation Framework programmes, (iii) and their main areas of interest in Horizon Europe.

### ***i) Identity of the respondents: a balanced group of respondents ensuring ownership beyond research and innovation creators.***

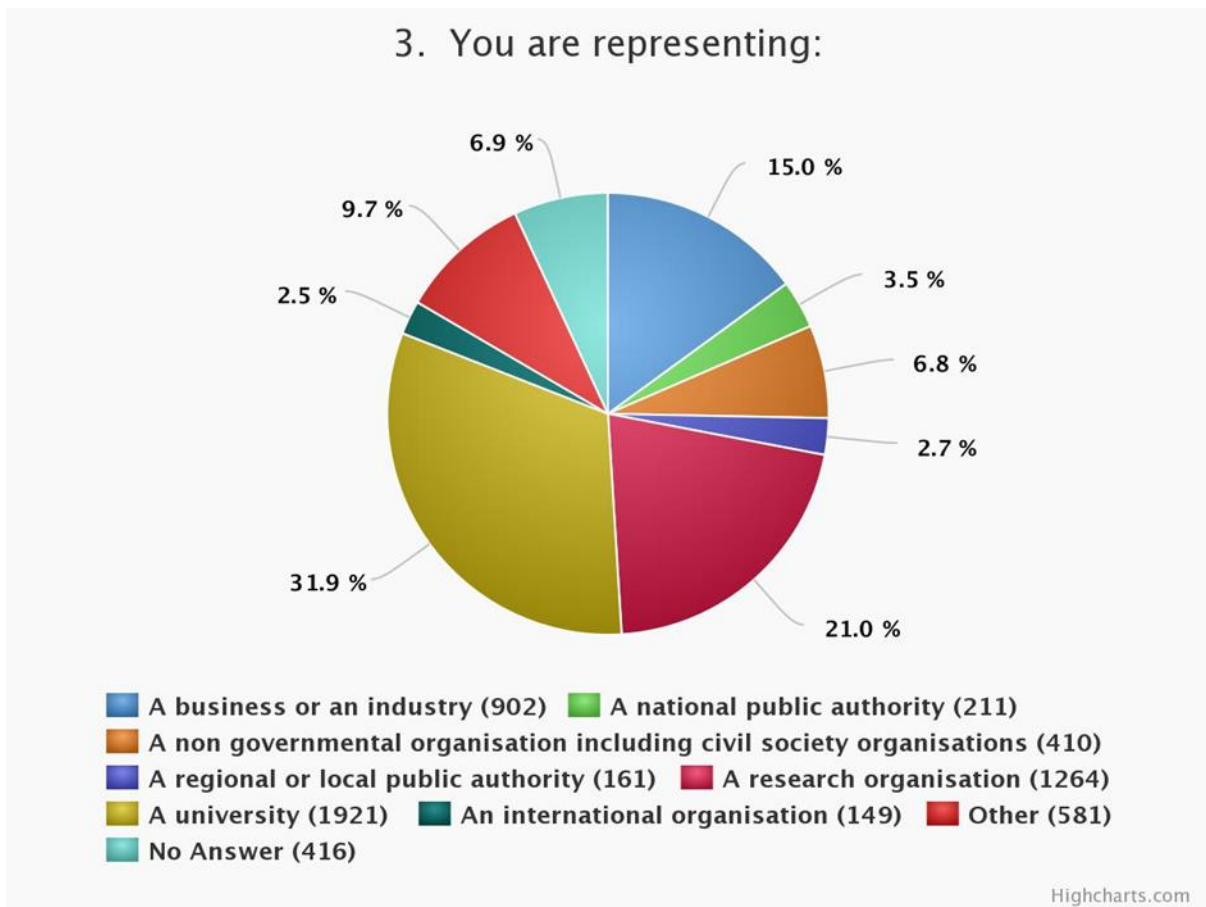
The profiles of respondents are balanced in different ways:



- approximately one half of respondents answered on a personal basis, driven by their own interest to Horizon Europe, whereas the other half represent an organisation.



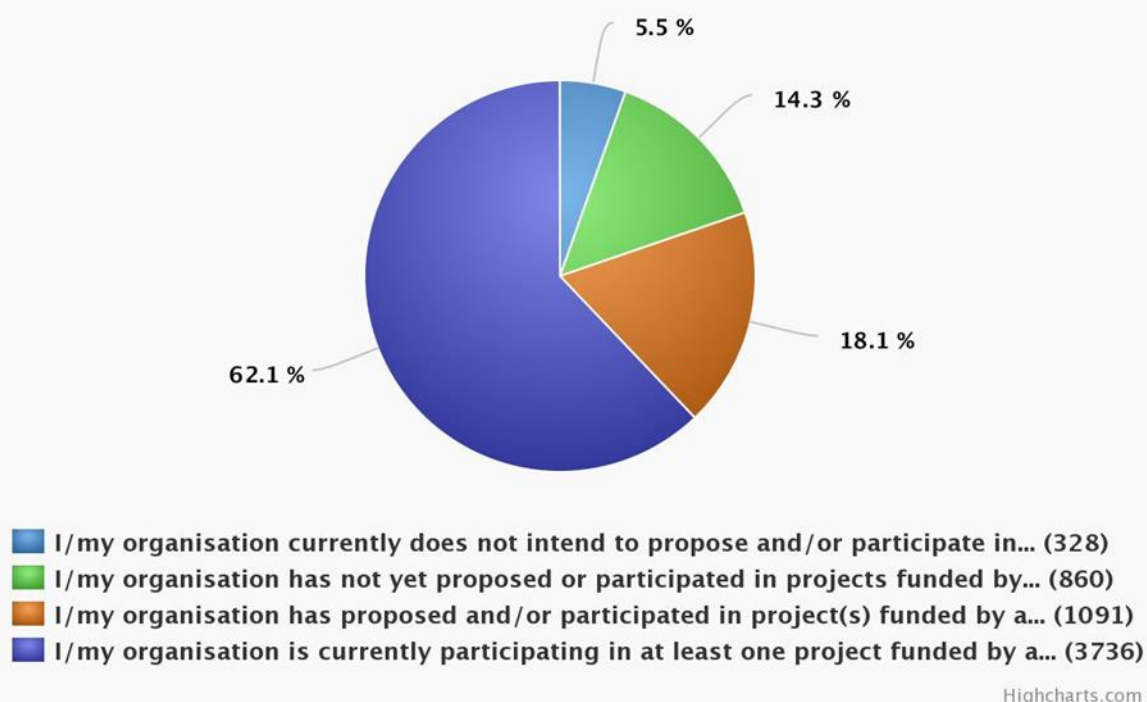
- Approximately one half of respondents are research and innovation creators whereas the other half is composed of research and innovation managers and/or users.



- More than 40% of respondents that declare to represent an organisation, can be qualified as R&I end users (without prejudice to their possible involvement in R&I activities). This indicates an ownership of Horizon Europe that extends beyond the classical R&I stakeholders.

**ii) Participation patterns in the current and previous EU R&I framework programmes**

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



From the top to the bottom, in full:

I/my organisation currently does not intend to propose and/or participate in projects funded by European Union R&I framework programmes, but I may be interested in the results of the projects/programme.

I/my organisation has not yet proposed or participated in projects funded by European Union R&I framework programmes, but would be interested to do so.

I/my organisation has proposed and/or participated in project(s) funded by a European Union R&I framework programme in the past, but I am/it is not participating in a running project at this moment.

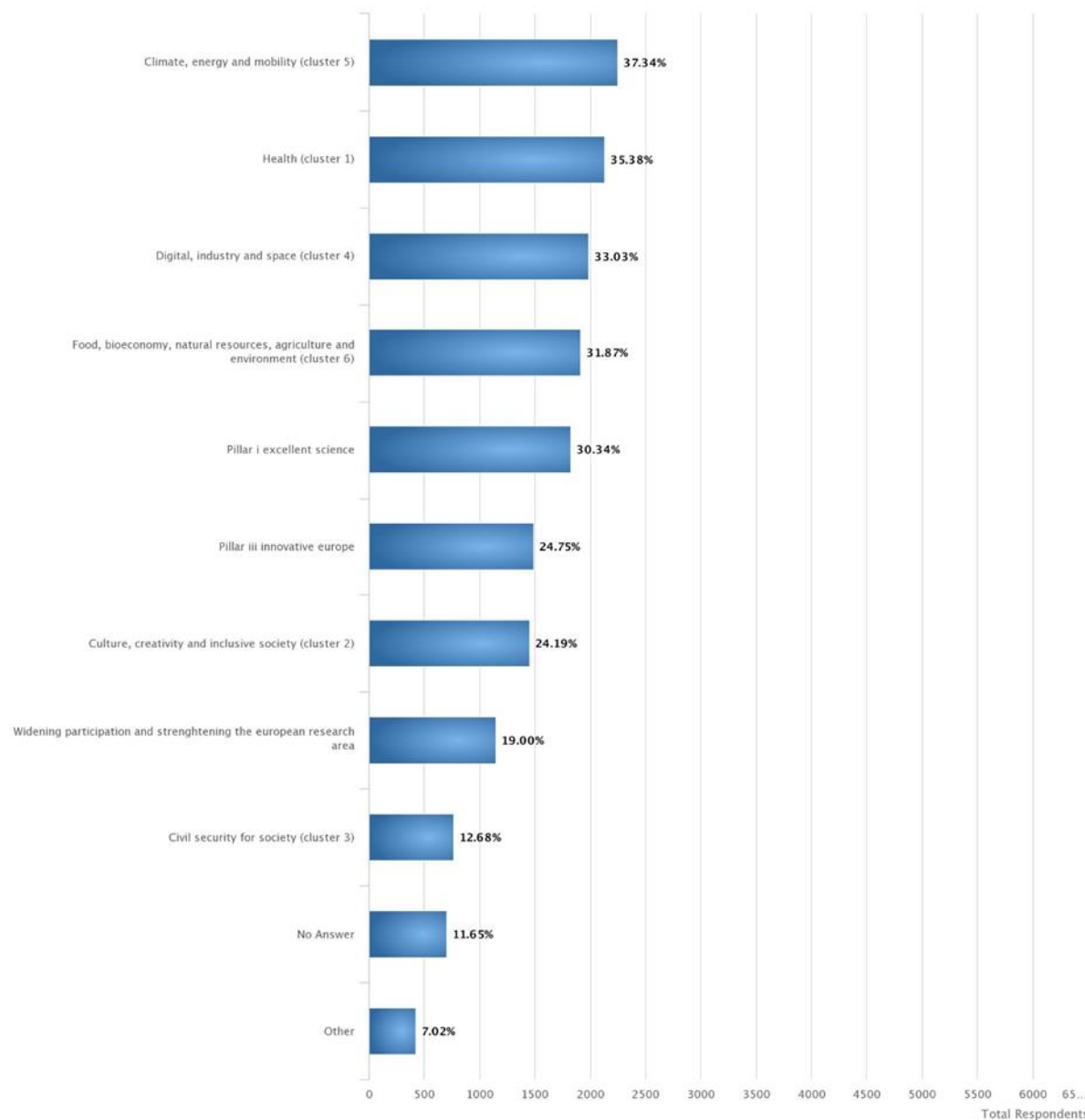
I/my organisation is currently participating in at least one project funded by a European Union R&I framework programme.

- The majority of respondents are currently involved in at least one activity funded by the current EU R&I framework programme, Horizon 2020. Nevertheless, almost 40% of respondents are interested in Horizon Europe without being currently involved in Horizon 2020, thus signalling a broad community of interested stakeholders.



### iii) main areas of interest in Horizon Europe

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



- All parts of Horizon Europe have received satisfactory signals of interest by the respondents. The cluster on climate, energy and mobility seems to be the most appealing part for the respondents.

### **3 Main lessons learnt from the respondents feedback on the clusters targeted impacts**

The feedback received so far largely confirms the drivers, the challenges, the future policy priorities and the targeted impacts described in the Orientations document and the relationships among them. The replies to the consultation offered interesting suggestions, which can be discussed during the Research & Innovation Days and considered in further iterations of the document.

As a first impression, a number of points repeated in many comments and across different areas, are summarized below:

- Certain themes (eg. Climate change, environment, migration) should be considered as cross-cutting, beyond their individual place in a given cluster;
- There is a need for exploiting synergies across clusters in order to maximise impact;
- Research infrastructures are seen as key platforms to provide support to the activities undertaken in other pillars and to facilitate international cooperation and interdisciplinary research activities for addressing global challenges;
- Respondents strongly support gender equality being set as a cross-cutting issue in R&I and underline the need to integrate the gender dimension within each component of Horizon Europe;
- Specific attention should be given to activities and/or research focusing on youth and children (e.g. educational opportunities, health inequalities).

**Cluster 1 (Health)** – About 1/3 of the total number of respondents expressed interest for this cluster. While substantial agreement is noted, many replies mention the issue of health inequalities and the need to effectively address them. Also, feedback refers to the need to trigger investment of the industry in underfunded areas of R&I (e.g. brain disorders, neglected diseases). Regarding the targeted impact for providing high-quality health care in the EU, several comments underline the need for substantial primary care and rehabilitation services.

**Cluster 2 (Culture, creativity and inclusive society)** – Cultural heritage and culture are seen as factors playing a key role in fostering understanding and forming the basis of a common European identity. Respondents also call for increased investment on research activities regarding history, education as well as social wellbeing and point out that these should not be explained solely in pure economic terms.

**Cluster 3 (Civil security for society)** – Increased cyber-security, improved disaster risk management as well as improved security of infrastructure are the main areas where most correspondents expressed their interest. In particular, many comments point to the fact that the increasing digitisation of the society adds vulnerabilities. In that respect, the protection of critical infrastructures and essential services (e.g. energy grids, Internet of Things) and the need to deliver cybersecurity along with privacy and personal data protection are seen as main challenges for the future.

**Cluster 4 (Digital, industry and space)** - Several replies underlined the need to safeguard EU industrial competitiveness vis-à-vis global competitors through a stronger EU presence in digital and other key enabling technologies for strategic value chains. Also, feedback from respondents refers to the need to highlight the strategic importance of the ongoing digital

and industrial transformation for the European economy and society, as well as of the space sector for achieving Europe's technological autonomy and security. In this context, input calls for reinforcing the R&I efforts in key enabling and digital technologies (including AI, quantum, mobile computing and big data technologies, etc. as well as in emerging technologies). It also calls for significant R&I efforts in space for developing new strategic infrastructure or to maintain the technological readiness of EU-owned ones with a set of common technology base for EU space systems. Regarding the targeted impacts of this cluster, the need for inclusiveness and inclusive digital societies in particular, was frequently mentioned along with citizen engagement and education to help achieve sustainability and a climate neutral and circular economy through a necessary cultural/behavioural shift. The need for climate-neutral, circular and clean industries and low carbon technologies for energy intensive industries was often appearing in the replies for this Cluster.

**Cluster 5 (Climate, energy and mobility)** – Replies in this cluster draw attention to the fact that climate change is a cross-cutting topic which should be considered across the various clusters as well. Also, it has been noted that, in order to mitigate the impact of breakthrough technologies on the labour market, the skills gap should be sufficiently addressed through capacity building to convert productive chains towards climate-neutral products, fit for a circular and clean industry. Along with the main impacts for carbon emissions and energy consumption, a certain number of replies stress the need to consider additional ones, e.g. for bio-diversity and land use.

**Cluster 6 (Food, bioeconomy, natural resources, agriculture and environment)** –In addition to a better integration of environmental concerns (notably biodiversity) in all the Clusters, respondents call for a more cross cutting approach. The role of research and innovation for enabling transformational change should be emphasized as well as the importance of place-based innovation (underlined notably by regions). The need for a transition towards more sustainable agriculture, fisheries, aquaculture and food-chain was strongly supported. More discussions on targeted impacts were also suggested.

The following slides present examples of the appreciation shown so far to different targeted impacts.

Cluster 1 - Targeted impacts indications

Targeted impact	Strong support (4+5) (all respondents)	Strong support (respondents interested in cluster 1)
Healthy citizens in a rapidly changing society	67,4	82,2
Healthy and health-promoting living and working environments	68,6	81,5
Effective health services to tackle diseases and reduce the burden of diseases	67,9	82,5
Improved access to innovative, sustainable and high-quality health care	69,5	81,6
Unlocking the full potential of new tools, technologies and digital solutions for a healthy society	70,9	81,1
A sustainable and globally competitive health-related industry in the EU	61,6	72,5

Cluster 2 - Targeted impacts indications

Targeted impact	Strong support (4+5) (all respondents)	Strong support (respondents interested in cluster 2)
Enhanced democracy and governance	55,6	72,6
Better approaches to tackling political extremism and polarisation	49,9	65,7
Reversing socio-economic and gender inequalities	52,9	69,2
Improved understanding of societal – including political, ethical and economic - effects of technological advancements and the impact of drivers of change	58,0	72,8
A novel growth model	53	62,1
Increased use of evidence-based strategies in the management of mobility and migration and the integration of migrants in European society	53,0	66,5
Better valorisation of European cultural heritage	46,5	64,3

Cluster 3 - Targeted impacts indications

Targeted impact	Strong support (4+5) (all respondents)	Strong support (respondents interested in cluster 3)
Improved disaster risk management and societal resilience	53,9	74,6
Improved management of EU external borders	33,9	46,8
Better protection of public spaces	38,1	53,88
Improved security and resilience of infrastructure and vital societal functions	34,9	47,8
Improved maritime security	32,3	48,7
More effective fight against crime and terrorism	41,2	59,3
Increased cybersecurity	58,7	74,3

Cluster 4 - Targeted impacts indications

Targeted impact	Strong support <sup>(4+5)</sup> (all respondents)	Strong support (respondents interested in cluster 4)
More appealing and creative jobs in Europe	63,0	67,9
Increased autonomy in critical raw materials	54,4	60,7
Increased industrial leadership in KETs and uptake of new technologies	72,3	83,2
Climate-neutral, circular and clean EU industries	80,3	83,8
Increased inclusiveness	79,1	82,9

Cluster 5 - Targeted impacts indications

Targeted impact	Strong support <sup>(4+5)</sup> (all respondents)	Strong support (respondents interested in cluster 5)
Advanced climate science and solutions	81,2	89,3
Novel competitive cross-sectoral solutions for decarbonisation	74,8	85,6
A novel energy system	79,3	86,9
New demand side solutions to decarbonise the energy and transport systems	72,4	82,5
Increased adaptation of production systems	64,8	73,5
Reinforced bio-economy	67,7	72,4
Reduction of greenhouse gas emissions	77,2	87,2

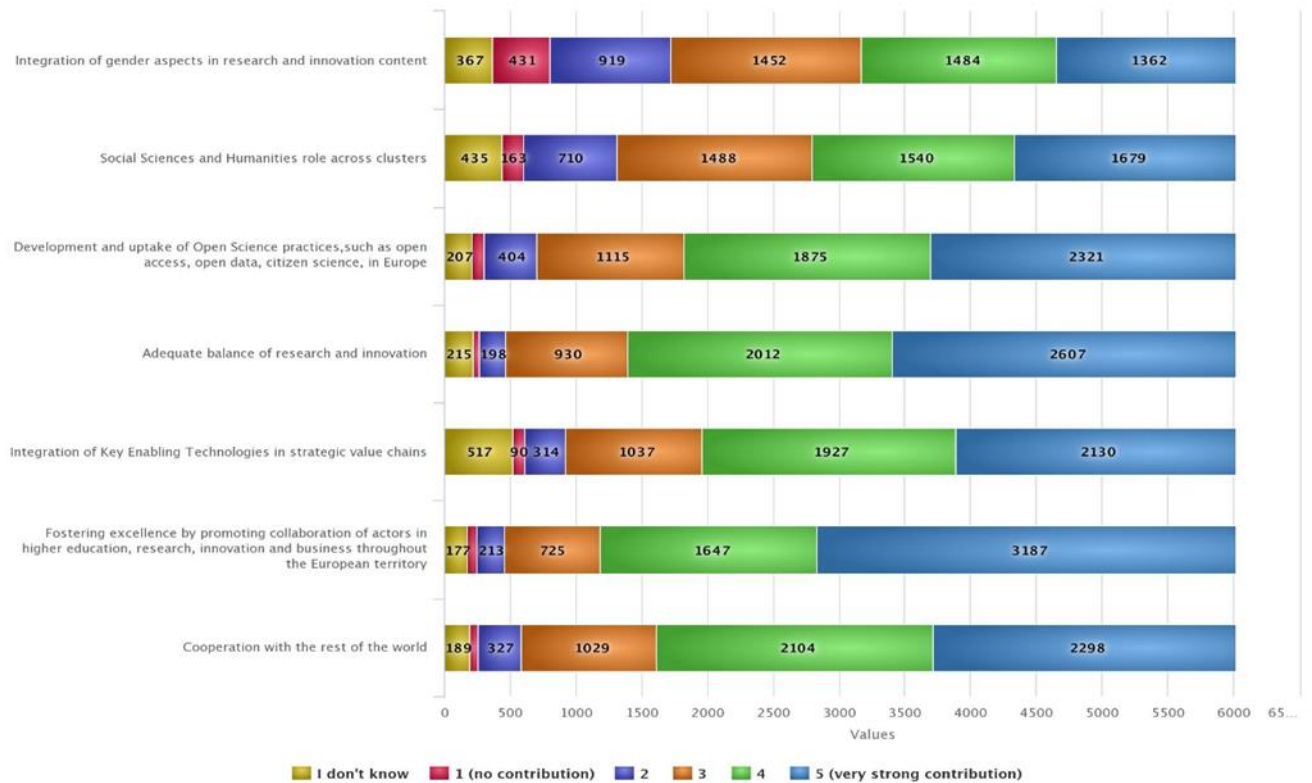


Cluster 6 - Targeted impacts indications

<b>Targeted impact</b>	<b>Strong support</b> <sup>(4+5)</sup> (all respondents)	<b>Strong support</b> (respondents interested in cluster 6)
Reduction of greenhouse gas emissions	77,2	84,3
Halt of biodiversity decline and restoration of ecosystems	72,57	82,0
Sustainable and circular management and use of natural resources	79,6	87,8
Establishment of new primary production, food and bio-based systems based on sustainability	55,53	74,02
Establishment of new governance models enabling sustainability	64,5	71,8

**4 Main Indications given on Horizon Europe cross-cutting issues**

5. In your view, to what extent will the following elements contribute to increase the scientific, economic and societal impacts of Horizon Europe investments (as identified in the "Orientations" document)?



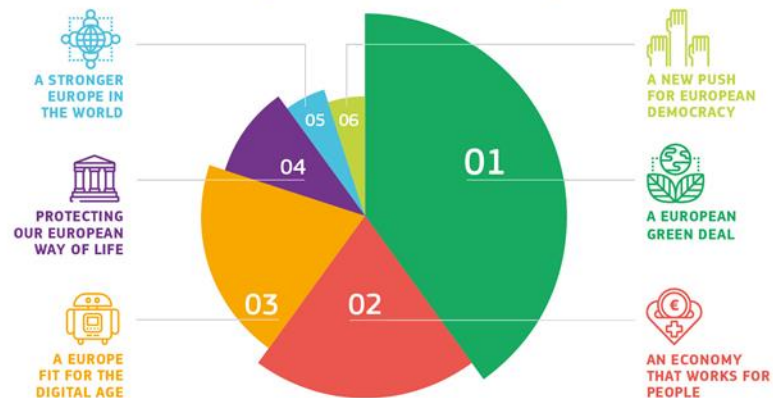
## **5 The political guideline of President elect Ursula von der Leyen**

The answers of the respondents echo positively the focus of the Political Guidelines of President-elect von der Leyen on six headline ambitions for Europe:

- A European Green Deal,
- An economy that works for people,
- A Europe fit for the digital age,
- Protecting our European way of life,
- A stronger Europe in the world,
- A new push for European democracy.

Through their cross-cutting thematic and organisational approach, the missions to emerge from the five missions areas of Horizon Europe (Adaptation to Climate Change, including Societal Transformation; Healthy Oceans, Seas, Coastal and Inland Waters; Climate-neutral and Smart Cities; Soil Health and Food) will interact with all six headlines ambitions.

### Targeted impacts for the von der Leyen political guidelines



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The following section presents examples of targeted impacts that will contribute the most to each of these six headline ambitions, with a reference to the Horizon Europe Clusters as well as candidate European partnerships:

### **1. A European Green Deal**

#### Cluster 4

- Climate-neutral, circular and clean EU industries by, for instance, creating plants in several regions with zero emissions and zero waste in the fight against climate change and the protection of the environment by helping to develop the necessary breakthrough technologies and solutions.

#### Cluster 5

- Advanced climate science and solutions,
- Novel competitive cross-sectoral solutions for decarbonisation such as batteries, hydrogen, sustainable infrastructure enabling low carbon solutions and other break-through technologies,
- A novel energy system centred on renewables and ensuring cost-efficient, greenhouse gas neutrality,
- New demand side solutions to decarbonise the energy and transport systems.

#### Clusters 5 and 6

- Reinforced bio-economy to supply sustainable biomaterials and bio-energy whilst staying within ecological boundaries,
- Reduction of greenhouse gas emissions,
- Increased adaptation of ecosystems and production systems as well as rural, coastal and urban areas to climate change.

#### Cluster 6

- Halt of biodiversity decline and restoration of ecosystems,
- Sustainable and circular management and use of natural resources; prevention and removal of pollution; healthy soils and clean water and air for all; attractive jobs, enhanced value creation and competitiveness,
- Establishment of new primary production, food and bio-based systems based on sustainability, inclusiveness, health and safety; food and nutrition security for all,
- Behavioural, socio-economic and demographic change are well understood and drive sustainability; a balanced development of vibrant rural, coastal, peri-urban and urban areas,
- Establishment of new governance models enabling sustainability.

Candidate European Partnerships:

- Transforming Europe's rail system,
- Integrated Air Traffic Management,
- Circular bio-based Europe,
- Clean Hydrogen,
- Clean Aviation,
- Safe and Automated Road Transport.

## **2. *An economy that works for people***

### Cluster 1

- Healthy citizens in a rapidly changing society: citizens stay healthier throughout the life course due to improved health promotion and disease prevention, and supported by healthier behaviours and lifestyles,
- Healthy and health-promoting living and working environments: policy-makers and industry take better account of the environmental factors for health and well-being and promote/support healthy and health-promoting living and working environments,
- Effective health services to tackle diseases and reduce the burden of diseases: patients can rely on effective health services to tackle their diseases, as well as to reduce the burden of diseases on them, their families and communities,
- Improved access to innovative, sustainable and high-quality health care: health systems are able to provide timely access to affordable health care services of high-quality to everybody while being environmentally and fiscally sustainable,
- Unlocking the full potential of new tools, technologies and digital solutions for a healthy society (also contributing to A Europe fit for the digital age),
- An innovative, sustainable and globally competitive health-related industry in the EU (also contributing to A Europe fit for the digital age).

### Cluster 2:

- Reversing socio-economic and gender inequalities via strategies of inclusion, non-discrimination, social protection and social investment,
- Improved understanding of societal – including political, ethical and economic - effects of technological advancements and the impact of drivers of change on jobs, skills, productivity, income, welfare and inequalities,
- A novel growth model respectful of inclusiveness and upward socio-economic convergence and resilient to economic, social, and financial shocks,
- Better valorisation of European cultural heritage by promoting the value, protection, access to and sustainable use of European cultural heritage and its contribution to the cultural and creative sectors.

Cluster 4

- Increased inclusiveness by making a two-way engagement in the development of technologies a reality, and by helping foster the skills agenda in, for instance, the digital area or advanced manufacturing area.

Candidate European Partnerships:

- Innovative Small and Medium-Sized Enterprises,
- EU-Africa research partnership on health security to tackle infectious diseases (Global Health),
- Innovative Health Initiative,
- European Metrology.

**3. A Europe fit for the digital age**

Cluster 1

- Unlocking the full potential of new tools, technologies and digital solutions for a healthy society: new tools, technologies and digital solutions provide significant gains in health outcomes, address unmet medical needs and inform regulatory standards and requirements,
- An innovative, sustainable and globally competitive health-related industry in the EU: health industries, including SMEs, increase their productivity and sustainability in developing health innovation due to the potential of data-enabled research and development, the related convergence of pharmaceutical, digital and medical technologies, and the prospect of the digital transformation of health and care supported by data-driven manufacturing of tailor-made products and the delivery of personalised services.

Cluster 4

- More appealing and creative jobs in Europe, by way of an industrial and digital transformation,
- Increased autonomy in critical raw materials through substitution, efficiency and recycling and primary production,
- Increased industrial leadership in key enabling and digital technologies and uptake of new technologies through technology infrastructures and autonomy in strategic value chains.

Candidate European Partnerships:

- Key Digital Technologies,
- Smart Networks and Services.

#### **4. Protecting our European way of life**

Cluster 2:

- Increased use of evidence-based strategies in the management of mobility and migration and the integration of migrants in European society.

Cluster 3:

- Improved disaster risk management and societal resilience through better understanding of natural and man-made disasters and by the development of novel concepts and technologies to counter these risks,
- Improved management of EU external borders (air, land and sea) by the development of tools and concepts towards an Integrated Border Management, including better knowledge of societal factors with regards to border security,
- Better protection of public spaces through novel methods to detect weapons, explosives and other dangerous items and by quicker response to threats without changing the open character of public spaces in the EU,
- Improved security and resilience of infrastructure and vital societal functions enabled by improved risk assessments and more efficient response to disruptions with a view of quickly restoring performance levels,
- Improved maritime security based on the EU Maritime Security Research Agenda to counter threats such as trafficking, piracy as well as cyber and hybrid threats,
- More effective fight against crime and terrorism through better understanding of societal factors leading to radicalisation and crime and by developing state of the art capabilities for Law Enforcement Agencies in the EU, notably against cybercrime,
- Increased cybersecurity based on more effective use of digital technologies, strong orientation on privacy and fundamental rights and a robust digital infrastructure to counter cyber-attacks.

#### **5. A stronger Europe in the world**

This is served by international cooperation activities across all clusters.

#### **6. A new push for European democracy**

Cluster 2:

- Enhanced democracy and governance through bolstering the accountability, legitimacy, transparency and effectiveness of democratic systems and the protection of the rule of law,
- Better approaches to tackling political extremism and polarisation by strengthening democratic participation and active citizenship, fostering awareness and exercise of democratic rights, and understanding the role of media in fostering or inhibiting political dialogue.

