

# Horizon Europe – Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment

## What is Horizon Europe?

Horizon Europe is the EU's key funding programme for research and innovation with a budget of €95.5 billion for the period 2021-2027. It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts Europe's competitiveness and growth.

The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports the creation and better sharing of knowledge and technologies.

It also creates jobs, fully engages Europe's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.

For information on UK participation in the programme see UKRO's [dedicated factsheet](#).

## What are clusters in Horizon Europe?

The 'Global Challenges and European Industrial Competitiveness' pillar of Horizon Europe will take forward the current societal challenges and industrial technologies in a more 'top-down' approach, addressing EU and global policy challenges. These challenges and opportunities will be integrated into six clusters - each with a number of specific intervention areas - designed to incentivise cross-disciplinary, cross-sectoral, cross-policy and international collaboration. In terms of addressing global political priorities, each cluster will contribute towards several Sustainable Development Goals (SDG) and many SDGs will be supported by more than one cluster.

The clusters and their intervention areas are expected to achieve greater impact when compared to the societal challenges of Horizon 2020 since they will cut across classical boundaries between disciplines and address different types of challenges. The integrated clusters of activities will derive from the the [First Strategic Plan for Horizon Europe 2021-24](#) and [Second Strategic Plan for Horizon Europe 2025-27](#) and will form the basis for support to collaborative research and innovation projects under the 'Global Challenges and European Industrial Competitiveness' pillar.

## What is funded under Cluster 6?

Cluster 6 has an overall budget of €8.952 billion. With this funding, this cluster will focus on funding activities aimed at enhancing and balancing environmental, social and economic goals and to set a path towards sustainability for human economic activities, on land and sea. All funded projects will support efforts for ecosystem integrity as well as territorially balanced and sustainable development and human well-being, including water, food and nutrition security.

Areas of intervention are set out in Horizon Europe legislation to give Cluster 6 a legal remit to cover:

- Environmental observation
- Biodiversity and natural capital
- Agriculture, forestry and rural areas
- Seas, oceans and inland waters
- Food systems
- Bio-based innovation systems
- Circular systems

These topics are reflected in the seven 'Destinations' of Cluster 6 which are stable over the years, have coherent sets of calls and are linked to Key Strategic Objectives (KSOs) in the [Strategic Plan](#):



### Biodiversity and ecosystem services

- Funding to bring biodiversity back on track to recovery by preserving and sustainably restoring ecosystems and their services on land, inland water and at sea through improved knowledge and innovation.
- Aims towards the Horizon Europe KSO of 'preservation and restoration of biodiversity and ecosystems'.



### Fair, healthy and environment-friendly food systems from primary production to consumption

- Funding for R&I to be a key driver for the transition at national, EU and global levels towards sustainable, healthy and inclusive food systems from farm to fork, thereby ensuring food security for all within planetary boundaries.
- Aims towards the Horizon Europe KSO of 'food and nutrition security for all from sustainable food systems from farm to fork'.



### Circular economy and bioeconomy sectors

- Funding to support climate-neutral circular and bioeconomy transitions in the wider economy at both territorial and sectoral levels. Less waste by extending the lifetime and retaining the value of products and materials.
- Aims towards Horizon Europe KSO of 'sustainable and circular management of natural resources; tackling pollution; bioeconomy'.



### Clean environment and zero pollution

- Funding seeking to halt and prevent pollution in fresh and marine waters, soils & air. Also focused on environmental performance and sustainability of processes in bio-based systems.
- Aims towards Horizon Europe KSO of 'sustainable and circular management of natural resources; tackling pollution; unlocking the bioeconomy'.



### Land, ocean and water for climate action

- Funding for R&I to better understand who, where or which activities are exposed and sensitive to climate change; furthermore, to assess the underlying vulnerability, associated costs and adaptive capacity of these exposures.
- Aims towards Horizon Europe KSO of 'climate neutrality and adaptation to climate change'.



### Resilient, inclusive, healthy and green rural, coastal and urban communities

- Funding for R&I that enhances communities' resilience and their capacity to contribute to and benefit from the upcoming transitions towards sustainability.
- Aims towards Horizon Europe KSO of 'balanced development of rural, coastal and urban areas'.



### Innovative governance, environmental observations and digital solutions in support of the Green Deal

- Funding for experiments with new ways to govern and provide insights into institutional barriers to transition processes while remaining resilient to shocks such as the COVID-19 pandemic.
- Aims towards Horizon Europe KSO of 'innovative governance models enabling sustainability, environmental observation'.

## Call timings

The 2023 and 2024 calls have now closed.

A novelty for the 2023-2024 calls is the marked increase in the [lump-sum funding model](#). Whereas previously this was only used occasionally in collaborative funding calls, it has applied to 47% of the call topics in the Cluster 6 2023-2024 Work Programme.

Please note that some topics have specific eligibility criteria, listed under eligibility and admissibility conditions, such as the obligation to include legal entities established in the target country/region. Applicants are advised to check the work programme for details relating to their topics of interest.

## Relevant EU policy areas and developments

Cluster 6 is strongly linked to one of the flagship initiatives of the new European Commission. The [European Green Deal](#) is a wholesale review of existing EU environmental and sustainability policy, plus the introduction of new legislation to achieve the target of making the EU carbon neutral' by 2050 to escalate the [2030 Climate Target Plan](#) in terms of ambition and enforceability. The Cluster 6 Work Programme includes many call topics which require applicants and grantees to directly contribute towards achieving these policy targets and transformations through their activities.

These policy-driven funding opportunities are intertwined with a programme of legislative reform at the European level. Examples of Green Deal legislative initiatives cited in the Cluster 6 2023-2024 Work Programme include [nature restoration](#), [sustainable use of pesticides](#) and [certification of carbon removal](#). These are not confirmed as legislation but are going through the European policy-making process.



The Commission's [Biodiversity Strategy for 2030](#) sets out to protect nature and reverse the degradation of ecosystems. In the post-COVID-19 context, improved protection of nature also aims to build societies' resilience to future threats posed by climate change, disease outbreaks or food insecurity. The Biodiversity Strategy is aligned with multi-lateral efforts, most recently the [global biodiversity agreement deal announced at COP15](#). Two key ecosystems for biodiversity and sustainable use as a natural resource are forests and seas. As a result, the EC has a [Forest Strategy](#) and an [approach to transforming the Blue Economy](#).



Food-related topics are an aspect of the European Green Deal and the basis for one of the Cluster 6 Destinations, in particular through the relevance of R&I in the [Farm to Fork Strategy](#). This strategy is about the systemic transition of how Europe grows, supplies and consumes food towards sustainable practices and produce. It aligns with an ongoing R&I-specific policy [Food 2030 Pathways to Action](#) which sets targets for transforming food systems and ensuring everyone has enough affordable, nutritious food to lead a healthy life. R&I is identified as a key driver of this transition in the Farm to Fork Strategy, which can "help develop and test solutions, overcome barriers and uncover new market opportunities". The EC's food policies also embed a significant number of Cluster 6 calls with scopes that expect a project methodology with interplay of R&I sectors with agricultural sectors and other stakeholders through the [multi-actor approach, facilitated by the EIP Agri platform](#) and project outcomes that address priorities like the [digitisation of the agricultural sector](#).

A significant policy debate in this area, with an impact on European law-making and broader society, is on the regulation of [New Genomic Techniques](#) – a debate sparked by advances in R&I that are increasingly used for food production outside Europe which led to the Commission announcing it would revisit the EU's 2001 legislation on GMOs. Geopolitical events such as the war in Ukraine have also raised the stakes for food security, so EU policy has responded with [safeguarding measures](#) and actions on the [availability and affordability of fertilisers in the EU and globally](#).

Cluster 6 is arguably the thematic area of Horizon Europe's Pillar II that is most open to the world. This is reflected in the high number of calls that require third-country participation and the aligned topic

areas included in many high-level agreements for R&I cooperation like the [EU-AU Innovation Agenda](#). As mentioned above, the EU's biodiversity policies are designed to align with UN-led multilateral agreements, the same is true of the EU's Climate targets concerning the [Paris Agreement](#) and its food policies concerning the [strategic framework](#) of the Food and Agricultural Organisation of the United Nations (FAO). Thus Cluster 6 is particularly well suited to the policy of funding [International Research and Innovation with Development Goals](#) while also forming a crucial part of [Horizon Europe's Global Approach](#) more generally.



Beyond matters of ecosystems and farms, EU policy also seeks to transform the human industry. The [Circular Economy Action Plan](#) (CEAP) is a crucial policy for the third destination listed above but is also linked to all other Destinations in Cluster 6. To carry out this plan the Commission sets out **35 specific actions** related to topics such as carbon farming, integrating biodiversity in circular economic activity or developing bio-based services, products or materials for circular economic models. In 2022 the EU held a [Bioeconomy Conference](#) to discuss progress made since the [EU Bioeconomy Strategy](#) was launched in 2018 with a wide range of stakeholders, including young researchers who can fill skills and technology gaps so that the transition is viable. Horizon Europe's [Circular Bio-based Europe Joint Undertaking](#) (CBE JU) has opportunities between R&I and industry that complements other bioeconomy-related calls in Cluster 6. Some specific industrial sectors have their own EC policy for transformation into a bioeconomy, including [Textiles](#) and [ecodesign requirements for sustainable products](#), both of which also have notable relevance to social sciences, arts and humanities R&I disciplines.



Whereas biodiversity, sustainable food and bioeconomy are the positive policy plans the EU has to transition towards becoming a green society, there are also issues caused by continuing damage made to the current socio-economic system to the environment. To understand, halt and reverse these damages, the Commission has adopted the [Zero Pollution Action Plan](#) and [Plastics Strategy](#). Pollution is also included in most of the recent strategies and target plans linked to Cluster 6. Longer-standing EU policies such as the Water Framework Directive are also cited in the Cluster 6 Work Programme.



Out on the oceans and seas are call topics Cluster 6 that have gained more prominence, although arguably they do not yet reach the level of priority attributed to issues on land. This development is linked to growing awareness of the importance of oceans and polar regions as an integral part of the Earth's climate system and policies designed to better ensure the integrity and resilience of these ecosystems. For researchers, these policies have driven manifests themselves in initiatives like the [European Partnership for a climate-neutral, sustainable and productive Blue Economy](#), as well as the [All-Atlantic Ocean R&I Declaration](#) signed in 2022 by the EC with seven Atlantic Partners.

The [EU Soil Strategy](#) was announced in 2021 after the Biodiversity and Farm to Fork strategies which both came out in 2020. Certainly, this third strategy knits these preceding two together, although it should be said that the Soil Strategy is common ground for most Cluster 6 policies. The need for healthy soils and threats of degradation feed into each of the Work Programme Destinations above. The importance of soil is further highlighted by the [European Soil Observatory](#) and the [Horizon Europe Mission on Soil Health and Food](#), both of which need R&I involvement and are frequently cited in the Cluster 6 Work Programme.

There are five Horizon Europe Missions in total, each of which has relevance to the policy and research needs grouped in Cluster 6 to some degree. Further information on the novel concept of 'Missions' under Horizon Europe is available in a dedicated [UKRO Missions factsheet](#).



The needs of communities in society differ according to where they live and work, whether they are in rural, coastal or urban settings. The EU has some policies that are directed at communities in specific settings, one example is the [Long-term vision for rural areas](#). Any setting-based policies that are relevant to a Cluster 6 call will be cited in the call topic description. The European Green Deal intersects with communities and their livelihoods

through the political objective of a **Just Transition**. The policy commits more support and to funding for efforts to understand social and economic effects for communities that are vulnerable or that need to change more than others as part of the overall, systemic transition to sustainability.



Governance concerning Cluster 6 is about providing different stakeholders from different sectors and walks of life the opportunity to participate in decision-making to address challenges and shape the benefits from the planned transition to sustainability. Governance plays a part in R&I of different forms and topics covered in Cluster 6. For example, space science and initiatives like the **Global Earth Observation System of Systems (GEOSS)** need to feed into the governance of society and be disseminated widely to citizens. R&I can also contribute to developing evidence-based governance. In the European agricultural context, these are focused on the governance integrated into the **Common Agricultural Policy** which seeks to develop the practice of agricultural knowledge and innovation systems (AKIS), as reflected by the multi-actor approach for R&I funding calls.

## More information

- [Horizon Europe website](#) and [Cluster 6 website](#)
- [2023-2025 Work Programme for Cluster 6](#)

Horizon Europe's legal basis:

- [Regulation establishing Horizon Europe](#)
- [Decision establishing the Specific Programme of Horizon Europe](#)
- [First Strategic Plan for Horizon Europe \(2021-2024\)](#)
- [Second Strategic Plan for Horizon Europe \(2025-2027\)](#)

UKRO Portal

- [UKRO Portal](#) (subscriber access required)

Other websites and resources

- [Cluster 6 information on the KTN-Innovate Network](#)