Horizon Europe Cluster 6

Destination 3, 4, 5, 7

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Destination 3 – Circular economy and bioeconomy sectors

- Targets climate-neutral **circular and bioeconomy transitions**, covering safe **integrated circular solutions at territorial and sectoral levels**,, as well as **key bioeconomy sectors** such as **sustainable bio-based systems**, **sustainable forestry**, **small-scale rural bio-based solutions**, and **aquatic value chains.**
- Supports the **European Green Deal**,.
- The focus on **circularity** aims at less waste and more value by extending the lifetime and retaining the value of products and materials
- Supports a **sharing, reusing, and material-efficient economy**, in a safe way, and minimises the non-sustainable use of natural resources
- **Circularity** however **has to be achieved in a safe, non-hazardous way** without (re-)connecting epidemiological pathways or introducing pathogen/toxin enrichment cycles when involving biogenic materials
- **Local and regional focus** is crucial for a circular economy and bioeconomy that is sustainable, regenerative, inclusive and just

Destination 3 – Circular economy and bioeconomy sectors

- The **Circular Cities and Regions Initiative (CCRI)** will expand the circular economy concept beyond traditional resource recovery in waste and water sectors and support the implementation, demonstration and replication of **systemic circular solutions** for the transition towards a sustainable, regenerative, inclusive and just circular economy at local and regional scale.
- **Bio-based innovation** lays the foundations for the transition away from a fossil-based carbon-intensive economy
- The **multifunctional and sustainable management of European forests** has a crucial role to play in the achievement of the EU's climate and energy policies, the transition to a circular and sustainable bioeconomy as well as the preservation of biodiversity and the provision of ecosystem services such as climate regulation, recreation, clean air, water resources and erosion control among many others.
- **Aquatic biological resources and blue biotechnology** are crucial to delivering on the Green Deal's ambition of a 'blue economy'

Destination 3 – Circular economy and bioeconomy sectors

- **Expected impacts**
- Proposals for topics under this Destination should **set out a credible pathway to developing circular economy and bioeconomy sectors**
- **Regional, rural, local/urban and consumer-based transitions** towards a sustainable, regenerative, inclusive and just circular economy and bioeconomy based on **enhanced knowledge and understanding of science**
- **European industrial sustainability, competitiveness and resource independence**
- **Improved consumer and citizen benefits**
- **Multi-functionality and management of forests** in Europe based on the three pillars of sustainability (economic, environmental and social)
- **Enlarged potential of marine and freshwater biological resources and blue biotechnology**

Destination 3 – Circular economy and bioeconomy sectors

- **Indicative budgets:**
- 2021: **93 million EUR**
- 2022: **137 million EUR**
- **2021 calls:**
- Opening: 15 Apr 2021
- Deadline(s): 01 Sep 2021
- **2022 calls:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022
- **Two-stage:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022 (First Stage), 01 Sep 2022 (Second Stage)

Destination 3 – Circular economy and bioeconomy sectors

- Enabling a circular economy transition
- Innovating sustainable bio-based systems and the bioeconomy
- Safeguarding the multiple functions of EU forests

Destination 4 – Clean environment and zero pollution

- Keeping our planet clean and our ecosystems healthy will not only contribute to **addressing the climate crisis** but also help **regenerate biodiversity**, ensure the **sustainability** of primary production activities and safeguard the **well-being of humankind**
- Destination 4 seeks to **halt and prevent pollution** by focussing the Work Programme 2021-2022 on fresh and marine waters, soils, air, including from nitrogen and phosphorus emissions, as well as on the environmental performance and sustainability of processes in the bio-based systems
- **Halting emissions of pollutants** to soils and waters is of fundamental significance for the planet
- **Diffuse emissions of pollutants** from land and urban sources, including atmospheric depositions, **are a major stress factor for terrestrial and aquatic ecosystems**, threatening the quality of surface waters and aquifers, and affecting soil quality and all water-dependent sectors that require a holistic understanding of the pollution sources, key vectors and pathways
- Climate change and increasing water demand will exert **significant pressures on surface and groundwater quality**

Destination 4 – Clean environment and zero pollution

- **Expected impacts**
  - **Pollution must be halted and eliminated** to guarantee clean and healthy soils, air, fresh and marine water for all
  - The goal is to **achieve a clean environment and zero pollution**
  - **Advanced understanding of** diffuse and point sources of **water pollution** in a global and climate change context
  - **Balanced N/P flows** well within safe ecological boundaries at EU, regional and local scale, contribute to restoring ecosystems
  - **Clean, unpolluted seas** in the EU
  - **Circular bio-based systems reversing climate change**, restoring biodiversity and protecting air, water and soil quality
  - **Innovative biotechnology** creating zero-pollution bio-based solutions

Destination 4 – Clean environment and zero pollution

- **Indicative budgets:**
- 2021: **65 million EUR**
- 2022: **51 million EUR**
- **2021 calls:**
- Opening: 15 Apr 2021
- Deadline(s): 01 Sep 2021
- **2022 calls:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022

Destination 4 – Clean environment and zero pollution

- Halting emissions of pollutants to soils and waters
- Addressing pollution on seas and oceans
- Increasing environmental performances and sustainability of processes and products
- Protecting drinking water and managing urban water pollution

Destination 5: Land, oceans and water for climate action

- Assessing the **impacts of climate change** requires **interdisciplinary and multidisciplinary research and investments** across a broad range of activities
- The **conservation and enhancement of Earth's natural carbon sinks** such as soils and plants, forests, farmed lands, wetlands and the oceans is crucial
- **R&I has a significant role to play to support the design and implementation of policies** that will ensure the achievement of EU climate objectives
- **Agriculture** has a significant **role to play to reduce and mitigate GHG emissions** and to enhance carbon sinks
- **Freshwater resources are increasingly under stress** as a consequence of overuse and climate change with wide-ranging consequences for human societies and ecosystems
- **Strengthening the ocean and climate nexus**

Destination 5: Land, oceans and water for climate action

- Priority to the **large-scale deployment and uptake of solutions for climate adaptation and mitigation**
- **Understanding the impacts of climate change on primary production and natural systems** is a pre-requisite for policy and societal action on climate change adaptation and mitigation
- **R&I** are also needed **to close knowledge gaps** in support of **decision-making**
- **Improved long-term observations and assessment of the effects of climate change** on diverse water uses and on the state of ecosystems and their services are required
- Achieving **sustainable land management and efficient use of natural resources** that foster climate change mitigation implies finding the **right balance** between productivity, climate, biodiversity and environmental goals in the agriculture and forestry sectors, with a long-term perspective
- R&I activities will support **solutions for climate- and environmentally-friendly practices**, to reduce emissions of major greenhouse gases and the environmental footprint of land use changes and agricultural activities.
- **Fostering adaptation to climate change of ecosystems, primary production, food systems and the bioeconomy**

Destination 5: Land, oceans and water for climate action

- **Expected impact:**
- Better understanding and enhancing the **mitigation potential of ecosystems and sectors** based on the sustainable management of natural resources;
- Advanced understanding and science to support **adaptation and resilience of natural and managed ecosystems, water and soil systems and economic sectors** in the context of the changing climate;
- **Efficient monitoring, assessment and projections** related to climate change impacts, mitigation and adaptation potential;
- **Fostered climate change mitigation in the primary sector , including by the reduction of GHG emissions**, maintenance of natural carbon sinks and enhancement of sequestration and storage of carbon in ecosystems;
- **Improved adaptive capacity of water and soil systems and sectors** including by unlocking the potential of nature-based solutions;
- **Better managed scarce resources**, in particular soils and water

Destination 5: Land, oceans and water for climate action

- **Indicative budgets:**
- 2021: **108 million EUR**
- 2022: **85 million EUR**
- **2021 calls:**
- Opening: 15 Apr 2021
- Deadline(s): 01 Sep 2021
- **2022 calls:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022

Destination 5: Land, oceans and water for climate action

- Water resources availability
- European Partnership Water Security for the Planet (Water4All)
- Polar processes
- Climate-smart farming
- Agroecological approaches
- Resilient livestock farming systems
- Agroforestry
- science-based knowledge on EU forests
- Climate sensitive water allocation systems
- Oceanic carbon cycle
- Food security

Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

- Transformative changes are **dynamic processes** that require **appropriate governance**. At the same time, governance requires multiple channels and networks that provide readily available data and information coming from different sources
- **R&I activities** under this destination aim at both: **experimenting with new ways to govern the transition process** and modernising the governance, in particular by making information and knowledge available and accessible
- **Innovative governance** supporting the Green Deal objectives needs to recognise, cope with and promote **resilience** in the face of on-going shocks and disruptions. **Critical risk assessment and reduction strategies** need to be incorporated

Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

- To maximise impacts of R&I on the ground and spark behavioural and socio-economic change, the **knowledge and innovation** produced throughout the whole Cluster **should be widely disseminated** to key stakeholders of the relevant sectors of the Cluster. In particular, the **Agricultural Knowledge and Innovation Systems** (AKIS) needs to be reinforced to accelerate the required transformative changes
- **Digital innovation**, in complementarity with Cluster 4 and Digital Europe Programmes activities, should bring **benefits for citizens, businesses, researchers, the environment, society** at large and **policy-makers**. The potential of the ongoing digital transformation, and its wider impacts, positive and negative, need to be better understood and monitored in view of future policy design and implementation, governance, and solution development
- This destination will develop **innovative digital and data based solutions** to support communities and society at large, and economic sectors relevant for this Cluster to achieve sustainability objectives

Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

- Expected impact
  - **Innovative governance models** enabling sustainability and resilience notably to achieve better informed decision-making processes, societal engagement and innovation;
  - **Green Deal related domains benefit from** further deployment and exploitation of Environmental Observation **data and products** ;
  - A **strengthened** Global Earth Observation System of Systems (**GEOSS**);
  - **Sustainability performance and competitiveness** in the domains covered by Cluster 6 are **enhanced** through further deployment of digital and data technologies as key enablers;
  - **More informed and engaged stakeholders and end users** including primary producers and consumers thanks to effective platforms such as Agriculture Knowledge and Innovation Systems (AKIS)
  - **Strengthened EU and international science-policy interfaces** to achieve the Sustainable Development Goals

Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

- **Indicative budgets:**
- 2021: **183.5 million EUR**
- 2022: **170 million EUR**
- **2021 calls:**
- Opening: 15 Apr 2021
- Deadline(s): 02 Sep 2021
- **2022 calls:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022
- **Two-stage:**
- Opening: 28 Oct 2021
- Deadline(s): 15 Feb 2022 (First Stage), 06 Sep 2022 (Second Stage)

Destination 7: Innovative governance, environmental observations and digital solutions in support of the Green Deal

- Innovating with governance models and supporting policies
- Deploying and adding value to Environmental Observations
- Digital and data technologies as key enablers
- Strengthening agricultural knowledge and innovation systems

Thank you for your attention!

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