



# **INFO DAYS**

CLUSTER 6 FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE & ENVIRONMENT

25 & 26 October 2021 27 October Brokerage



https://europa.eu/!NF8QU7

THE EU RESEARCH & INNOVATION PROGRAMME 2021 - 2027

# CALL INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL





# INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL

Call HORIZON-CL6-2022-GOVERNANCE-01







### **POLICY CONTEXT**

- European Green Deal
- European space programme with the Copernicus part on Earth observation, European Space Agency's (ESA) Earth observation programme
- The European digital strategy, the European strategy for data, the common agricultural policy, etc

### IMPACT FROM STRATEGIC PLAN

 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

### **IMPACT AREAS**

- Climate change mitigation and adaptation
- Clean and healthy air, water and soil
- Enhancing ecosystems and biodiversity on land and in water
- Sustainable food systems from farm to fork on land and sea
- High quality digital services for all
- A Competitive and secure data-economy



# INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL

Call HORIZON-CL6-2022-GOVERNANCE-01

### **Expected impacts**

- 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**.



INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL

15 topics in 2022 with a total budget of 147 million, split into:

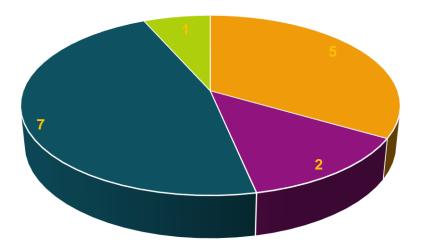
7 CSAs 5 RIA

**2 IA** 

1 co-funded partnership

Call HORIZON-CL6-2022-GOVERNANCE-01

**Destination 7 per type of Action** 



• RIA • IA • CSA • Co-funded Partn.



**CLUSTER 6 - INFO DAYS** 

# Thank you!

Questions? www.slido.com #CL6INFODAY



#### **#CL6INFODAY**

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Thematic networks to compile and share knowledge ready for practice

### **Coordination and Support Action**

CALL INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL







#### **POLICY CONTEXT**

 European Green Deal and its Farm to fork and Biodiversity strategies -> Support summarizing and sharing of smart practice ready knowledge

#### Target: Summarizing of existing knowledge easy understandable and ready for practice to become more used and shared

- CAP Cross-cutting Objective on knowledge
   and innovation
- Feed into AKIS and CAP networks' practice information distribution
- Speed up innovation and the uptake of results, which is key to improve sustainability, change farmers' behaviour and save funding



### **EXPECTED OUTCOMES**

- Collecting, translating and sharing with a multiactor approach existing knowledge and best practices in a language that is appealing, easy to understand and is <u>targeted to farmers and foresters' needs</u>.
- Making wider use of best practices and research findings that are close to be put into practice, but insufficiently known by practitioners
- Create added value by achieving greater user acceptance of collected solutions, to help the transition towards a smarter and greener agriculture and food system



### SCOPE

- Summarise, share and present in a language that is easy to understand and is targeted to farmers and foresters – the existing best practices and research findings that are ready to be put into practice, but not sufficiently known or used by practitioners.
- Description the state of current farming practices on the chosen theme to explain the added-value of the proposal and the relevance of the theme. No duplication with ongoing or completed projects
- Focus on **cost/benefit aspects** of collected practices
- Deliver practical appealing material, easy to understand, using audio-visuals wherever possible, both at the EU level (EIP-AGRI)
- And disseminate through national/regional/local AKIS channels, which are most consulted by farmers/foresters



**INDICATIVE BUDGET 3 mln EUR** per project (**9 mln EUR** in total)



Important! Multi-actor Cooperate with GOV-01-24 Run minimum 3 years Cooperate with OGs



European

Commission

# Multi-Actor Approach (MAA) in Cluster 6

# NEW **Multi-Actor requirements can be found on:** wp-9-food-bioeconomy-natural-resources-agriculture-and-environment\_horizon-2021-2022\_en.pdf (europa.eu) page 19-21

### **1.** The MAA is an integral part of the topic text and is counted as criterion for excellence:

- Clarity and pertinence of the project's objectives (=> focus on needs and opportunities of end-users of project results)
- Soundness of the proposed methodology, including open science practices including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate (=> focus on working according to MAA and plenty of broad communication and dissemination, in particular to end-users of project results)

### 2. The MAA = eligibility criterion as indicated in the topic table: « proposals must use the MAA »

3. IMPACT of MA project: outcomes are more demand-driven, reliable and relevant to society

4. End-users/practitioners and intermediates are to be involved, not as a study-object, but to use their practical and local knowledge and/or entrepreneurial skills to develop solutions and create 'co-ownership' of results for (end-) users and practitioners APPLIED RESEARCH

5. This will speed up the acceptance and take-up of new ideas, approaches and solutions developed in the project

# **The Multi-Actor requirements**

- 1. Project objectives must be targeting the needs and opportunities of end-users of results
- 2. The project concept and composition of the consortium must reflect a balanced choice of key relevant actors with complementary knowledge, able to ensure broad implementation. All actors actively involved all over the whole course of the project as from the planning phase
- 3. Cross-fertilisation during the project must integrate tacit and practical knowledge
- 4. Use methods to facilitate the multi-actor engagement process
- 5. Demonstrate added value: how does the project complement existing research and best practices?
- 6. Results must be practical, easily understandable and feed into the most used dissemination channels for end-users
- 7. For EU wide communication: "practice abstracts" in the common EIP format
- 8. Involve as much as possible local interactive innovation groups (EIP-AGRI Operational Groups under the CAP)

Broaden EIP Operational Group outcomes across borders by means of thematic networks, compiling and sharing knowledge ready for practice

**Coordination and Support Action** 

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#### **POLICY CONTEXT**

 European Green Deal and its Farm to fork and Biodiversity strategies -> Support summarizing and sharing of smart practice ready knowledge

#### Target: Summarizing of existing knowledge easy understandable and ready for practice to become more used and shared

- CAP Cross-cutting Objective on knowledge and innovation to enhance desired transitions
- Support learning processes of the AKIS actors in the countries
- Feed into CAP networks' practice information distribution tools



#### **EXPECTED OUTCOMES**

- Collecting, translating and sharing in a multi-actor approach existing knowledge in a language that is appealing, easy to understand and is <u>targeted to</u> <u>farmers and foresters' needs</u>.
- Creating added value by achieving greater user acceptance of collected solutions, to help the transition towards a smarter and greener agriculture and food system by <u>closer connecting</u> <u>the local and the EU level</u>
- Making wider use of best practices and research findings that are close to be put into practice, but insufficiently known by practitioners



### SCOPE

- <u>Tackle the most urgent needs of farmers and foresters</u> by building on the experience and outcomes of at least 5 EIP-AGRI Operational Group projects of at least 3 Member States.
- Choose the common OG theme on which to collect, summarise, share and translate the existing knowledge from science and practice into an attractive and easy-to-understand way for practitioners.
- Scale those outcomes up at European level.
- Use audio-visuals, on-farm demo, peer-to-peer learning,...
- Pay attention to **cost-benefit aspects** of collected practices
- Deliver practical output material both the EU level (EIP-AGRI)
- <u>And</u> disseminate through **national/regional/local AKIS channels**, which are most consulted by farmers/foresters



**INDICATIVE BUDGET 2 mln EUR** per project (**4 mln EUR** in total)



Important! Multi-actor Cooperate with GOV-01-24



Improving preparation of multi-actor projects to enable the relevant actors to work in a co-creative way

**Coordination and Support Action** 

CALL INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL





#### **POLICY CONTEXT**



European Green Deal and its Farm to fork and Biodiversity strategies -> Improvement of the preparation of multi-actor projects to enable the relevant actors to work in a more cocreative way.

Target: Approaches for developing sound, coherent, and well-prepared multi-actor projects, enabling project coordinators to use the complementary knowledge of partners to prepare actions to find ready-to-use solutions

- CAP Cross-cutting Objective on knowledge and innovation
- Improve interactions and connections within the AKIS, so that the relevant actors find each other and get help.
   Improve social and drafting skills.

#### **EXPECTED OUTCOMES**

- Improve the drafting of multi-actor project proposals and in particular the connection and involvement of relevant actors with complementary knowledge in a balanced way in the preparatory stage
- Create added value by better linking research, education, advisors and farming practice and encourage the wider use of available knowledge and innovation
- Connect innovation actors and projects at all levels, resulting in faster and wider co-creation and transposition of innovative solutions into practice and communicate to the scientific community the research needs of practice



#### SCOPE

- Better include at an early stage the needed variety of relevant practice actors in a balanced way and to be able to find useful information for the topic, with the view of strengthening co-creation between all actors even <u>before the start</u> <u>and selection of the project</u>. Make use of potential capacities of national/regional AKIS and AKIS coordination bodies to this effect.
- In particular, <u>test out the provision of seed funding</u> to fund the preparation phase, as in EIP- Operational Group innovative projects
- Find ways to improve the <u>connection and interaction between Horizon</u> <u>Europe multi-actor projects and EIP-AGRI OG</u> innovation projects on specific topics <u>before the very start</u> of the multi-actor project, thus improving the interaction between the local/regional/ national level and the EU level and the quality of project proposals.
- Develop guidelines and **pathways**, **maybe at institutional level**, to improve the overall quality of the preparation phase of multi-actor projects.
- Build on the outcomes of call 2021: GOV-1-24, COMM-01-01, GOV 1-25, and cover all 27 EU MS. Disseminate as foreseen for all MA projects. Note the specific actors to be involved and to present the outcomes to policymakers at all levels, influencing policies and governance.







Important! Multi-actor Cooperate with GOV-01-24

At least 5 years' projects



Developing EU advisory networks on water use

**Coordination and Support Action** 

CALL INNOVATIVE GOVERNANCE, ENVIRONMENTAL OBSERVATIONS AND DIGITAL SOLUTIONS IN SUPPORT OF THE GREEN DEAL









#### **POLICY CONTEXT**

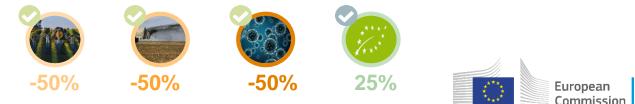
European Green Deal and its Farm to fork and Biodiversity strategies -> Impartial advisors fully integrated in the AKIS should exchange and support the uptake of practice oriented knowledge on novel advice themes

Target: Develop advisor knowledge and<br/>exchanges across the EU to increase<br/>the speed of knowledge sharing and<br/>capacity building on consumer-<br/>producer interconnections

- CAP Cross-cutting Objective on knowledge and innovation
- Support learning processes of advisors across the EU and the exchanges between them

#### **EXPECTED OUTCOMES**

- Connect advisors specialized in water issues and with hands-on experience across Europe for sustainable approaches (economic, environmental and social)
- Increase farmers' viability and help reduction of water pollution and use
- Develop supporting services and sharing of materials to facilitate the upscaling of prevention of water shortage and pollution
- Interact with policy makers on institutional barriers to practical water issues (bottlenecks, lock-ins, ambitious regulations)



### SCOPE



Connect advisors having a broad and close network of farmers across the EU. Focus on cost- benefit elements and financial quick-wins, taking into account local conditions.

- Integrate the advisors of the EU network on water use into the Member States' AKIS as much as possible, e.g. for one-to one advice, as innovation brokers for EIP Operational Groups on innovative water use solutions, for hands-on training, for national thematic networks etc
- **Document and share good examples,** explore open use and open source digital tools. Deliver the material to the EIP-AGRI <u>and</u> to local channels most used by farmers. Provide back-office support to generalist advisors.
- **Cover all EU MS** and explore cooperative upscaling of the advisors' network's activities on water use at the level of a few MS. Seek if common tools can increase implementation of the learnings from the project.
- **Build on the** outcomes of EIP-AGRI Focus Group, EIP-AGRI workshop and on the H2020 Thematic network to improve water management, etc



**INDICATIVE BUDGET 4 mln EUR** per project (**8 mln EUR** in total)



Important! Multi-actor Cooperate with GOV-01-24

At least 5 years' projects



Mobilisation of society to transform food systems for co-benefits

**Coordination and Support Action** 







#### **POLICY CONTEXT**

• The European Green Deal has set Europe on its path to be the first climate neutral continent by 2050 and achieve a green transition that is just, fair and inclusive.



• Fit4Food2030 initiative



**Related impact:** More informed and engaged stakeholders and end users

#### **EXPECTED OUTCOMES**

- Help transform food systems for co-benefits to nutrition and health, climate, environment, biodiversity
- Build on the Fit4Food2030 initiative to further the mobilisation of all relevant Food System stakeholders to work together via an interlinked structure
- A new and improved structured network of evidencebased policy labs throughout Europe
- Increased pan-European citizen engagement, social innovation and co-creation through local or regional living lab





### SCOPE

- Establish a pan-European Food 2030 multi-actor and public engagement mechanism to raise food system awareness and foster more citizen involvement
- Engage a network of science museums to co-create and deploy a Food 2030 "food systems lab"
- Support emerging relevant citizen science projects at local level
- Develop and deploy innovative interactive food systems education
   material
- Facilitate the cooperation of relevant EU Horizon Europe projects
- Measurement of food systems transition progress
- Explain and map how co-benefits will be achieved relevant to the four Food 2030 priorities



**INDICATIVE BUDGET 8 mln EUR** per project

(8 mln EUR in total)



Important! Multi-actor approach SSH flagged topic Collaboration with other projects



# HORIZON-CL6-2022-GOVERNANCE-01-02 European Partnership for a climate neutral, sustainable and productive Blue Economy

**Research and Innovation Actions** 





### **POLICY CONTEXT**

- European Green Deal objectives and its different strategies on
  - Biodiversity
  - Farm to Fork
  - Circular economy action plan
  - Zero pollution ambition
- Digital Europe priorities
- MSFD + MSP
- Sea basin specific Strategic Research and Innovation Agenda's (Baltic and North Sea, Black Sea (Synergy), Mediterranean Sea, Atlantic)
- EU and international science-policy interfaces in marine/maritime
- Global Earth Observation System of Systems (GEOSS)
- UN Decade of Ocean Science
- G7 Future of the Seas and Oceans Initiative



**Related impact:** better informed decision-making processes, societal engagement and innovation

Related impact: innovative governance models enabling sustainability and resilience

### **EXPECTED OUTCOMES**

- Sustainability & resilience of the blue economy
- Strengthened EU and international science-policy interfaces in marineand maritime-related domains (including GEOSS)
- Enhanced EU and national multi-level cooperation and alignment
- Strengthened role of Europe in ocean science, research, social and technological developments
- Measurable contribution to the **climate neutrality** of the blue economy
- Science-based implementation of EU marine-related legislation, regulations and objectives
- Sustainable, fair and just solutions for blue economy and communities
- Deployment of digital, nature-based and social innovations as well as community-led and purpose-driven technology
- Increased **Ocean literacy** in the EU and beyond
- Sustained ocean and coastal observations & availability of FAIR data
- Strengthened global cooperation with key partners bordering the different EU sea basins





#### SCOPE

- Impact-driven and coherent approach to address common issues jointly
- Facilitate the use of **scientific knowledge** by regulators & policy-makers
- Technological, nature-based, social, economic and cultural innovation + experiment with new planning, governance, business and finance models
- Europe-wide holistic, integrated, systemic and cross-sectoral approaches
- Engage local, regional and national authorities, industry and businesses, including SMEs, knowledge institutions and citizens
- Quality of life and long-term **socio-economic prospects of coastal communities,** including women, youth and the most vulnerable groups
- Joint calls for transnational proposals one of the primary activities + joint activities without co-funding from the Union + supporting coordination, international cooperation and outreach, uptake of results etc.
- SRIA implementation modalities, annual work plans, set-up of multistakeholder community of practice to facilitate science-policy-businesssociety dialogues, cluster of projects, knowledge hubs, rigorous monitoring
- Mobilise EU, national and regional capacities to leverage investments
- Engagement with managing authorities of European Structural and Investment Funds, LIFE, IPA III, NDICI



INDICATIVE BUDGET EUR 23 million (150 million total duration)



### Important!

Copernicus and/or Galileo/EGNOS Cooperation and synergies with other Partnerships and Ocean & Water Mission Third country participation SSH and ocean sustainability flagged



Multi-layer governance performance of marine policies

**Research and Innovation Actions** 

#### **#CL6INFODAY**







#### **POLICY CONTEXT**

- The European Green Deal
- The need for better informed decisionmaking processes, social engagement and innovation and the need for EU and international science-policy interfaces.
- coordination between Currently, poor sectoral approaches, low institutional capacity, weak implementation of international conventions and lack of technical knowledge and of financial resources for regional, cross-regional and national processes.
- A new more impact-focused approach to partnerships under Horizon Europe
- **Missions** under Horizon Europe



**Related impact: better** informed decision-making processes, societal engagement and innovation

# governance models enabling sustainability and resilience **EXPECTED OUTCOMES**

- ✓ Improve understanding by the policy making community of the institutional barriers in the formulation and implementation of marine policies.
- ✓ Improve understanding of **formal and informal** policy governance work streams or processes.
- ✓ Strengthen **e-government** and facilitate greater access to public services.
- ✓ Enable appropriate communication, exchange, coordination and management at regional, national and European level.
- ✓ Improve collaborative governance performance leading to increased trust in policy making.



Related impact: innovative



#### SCOPE

- Conceptualise and operationalise strategies to address identified barriers to collaborative governance related to the ocean and seas, addressing the need to meet increasing public demands.
  - Visioning, experimentation
  - Strong recommendations on required capacity building
- Improve or develop and leverage innovative digital tools, towards a **stronger e-government** and easily achievable **open government data**.
- Cover comparisons within, across and between different spatial governance layers (local, regional, inter-regional, macro-regional, crossborder, international) to cover a representative set of governance structures across Europe varying according to size and geographical, environmental, socio-economic, institutional and administrative conditions.
- Use **interactive research approaches** to engage with local, regional, national and international authorities, as well as local communities, citizens and other relevant stakeholders, considering gender, age and socio-economic background, where relevant.



**INDICATIVE BUDGET 6 mIn EUR** per project (**6 mIn EUR** in total)



#### Important!

Links to the Horizon Europe Mission Ocean, seas and waters and the Partnership for a climate neutral, sustainable and productive Blue Economy.



Consumer-focused labelling options for bio-based products

**Coordination and Support Actions** 





# 01-114 HORIZON-CL6-2022-GOVERNAN( Related impact: Sustainability performance and



#### **POLICY CONTEXT**



- European Green Deal: Zero pollution action plan, the Circular economy action plan and 2030 Climate target plan aim at fighting the climate change caused by anthropogenic activities
- The transformative changes required within the ٠ European Green Deal are dynamic processes that require appropriate governance
- Circular bio-based systems have the potential to ٠ contribute substantially to keeping our planet healthy, provided they developed are sustainably, which is at the core of the **Bioeconomy strategy**

# engagement and innovation EXPECTED OUTCOMES

competitiveness in the bio-based systems are enabled through innovative

governance models to foster social

- Transparency of bio-based products and information to consumers and public authorities are provided through effective and robust business-to-consumers labelling on product traceability, quality, carbon footprint, biodiversity impacts and other environmental footprints.
- Consumers, industry and public bodies are enabled to switch towards socially and environmentally responsible behaviour within their choices in a transparent and inclusive way.
- Improved understanding of metrics on value generated per unit of biological resources



# SCOPE

- Develop pre- and co-normative research to design or update standards and labels for business-to-consumers communication
- Perspectives of public authorities (national, regional, local) and consumers
- Options for the consumers in the digital age
- Metrics on value generated, in the final product, per unit of biological feedstock, including bio-waste
- Monitoring system and indicators of effectiveness and robustness of business-to-consumers labels and certification schemes. Costs and benefits
- Inclusiveness of all actors; social measures to enable consumers to switch towards socially and environmentally responsible behaviour within their choices



INDICATIVE BUDGET

3 mln EUR per project (3 mln EUR in total)



#### Important!

Complementarities with related actions on bio-based innovation and market measures



Innovative tools and methods to evaluate the design and support, monitoring and implementation of effective CAP strategic plans

**Coordination and Support Actions** 

**#CL6INFODAY** 









### **POLICY CONTEXT**

- Advancing research, knowledgesharing, and innovation is essential for securing a smart and sustainable agricultural sector;
- <u>CAP</u> is the most important EU policy with potential significant impact on agri-food systems;
- New CAP delivery model with Member States in charge of maximizing the contribution to EU objectives.

Related impact: Innovative governance models enabling sustainability and resilience notably to achieve better informed decision-making processes, social engagement and innovation



#### **EXPECTED OUTCOMES**

To strengthened EU science-policy interfaces to support the GD and SDGs, with better informed decision-making process in agricultural policies for the green transition:

- support policy makers with cutting-edge tools and methods to design, monitor and implement tailored and results-based CAP strategic plans reflecting the ambition of the F2F and the GD broadly
- improve accountability of the CAP strategic plans through SMART\* targets that are coherent with EU objectives and international commitments
- share good practices on the application of innovative tools and methods across Member States





### SCOPE

- Review and benchmark existing tools and/or methods used in different Member States to support the development, implementation and monitoring of effective CAP strategic plans.
- Develop, test and demonstrate a set of innovative tools and/or methods, both qualitative and quantitative, to evaluate the design and support the implementation and monitoring of effective CAP strategic plans
- Tools and/or methods should:
  - consider objectives and policies post-2020 CAP;
  - consider coherence between CAP, EU policies and as international commitments
  - consider existing EC tools/methods (compatibility and/or innovative approach)
- Propose case studies in MS with diverse coverage of farming systems considering geographical balance (including outermost regions) and different government structures



**INDICATIVE BUDGET** 4 mln EUR



#### Important!

JRC may participate:

ensure access to tools and improved coherence with tools used by EC



### Water governance, economic and financial sustainability of water systems

### **Research and Innovation Actions**





## HORIZON-CL6-2022-GOVERNANCE-01-06 Related impact: Innovative



#### **POLICY CONTEXT**

- Complexity multiple of water challenges
- Water problems are commonly the • results of governance problems
- Need to changing the way water is • used, managed and shared with people, our environment and our economy
- Need to design and implement • new multi-level governance and institutional settings the for implementation of sound water management



#### EXPECTED OUTCOMES

- Improve policy implementation for securing sustainable water use across sectors
- ✓ Promote a better integrated planning approach across waterusing sectors, help to link water management to the economic and social development sectors, support coordination between water policies and other relevant policies and coordination of planning measures across relevant EU and national instruments
- Empower citizens, help society to implement through governance, the technological, economic, political, and social measures that will set a course toward the achievement of a desirable, more sustainable and secure water future
- Support the implementation of the EGD and relevant SDGs



governance models enabling sustainability and resilience notably to achieve better informed decision-making

processes, social engagement and innovation

SCOPE

- Validate innovative multi-level water governance practices among various stakeholders and support the implementation of relevant governance indicators
- Assess current governance approaches and organisational models in different river basins to optimise water governance and integrate it with other sectors (energy, agriculture, land use and urbanization)
- Understand how different operational governance contexts at various levels, influence the effective realisation of sustainable water management in practice and explore the interaction among governance approaches at different spatial and temporal scales
- Address ways to value water and develop appropriate tariffs and pricing policies and assess the role of appropriate economic policy instruments, financing and business models in governance
- Develop innovative mechanisms to promote stakeholder engagement and involvement of public participation



**INDICATIVE BUDGET 3 mln EUR** per project (**10 mln EUR** in total)



Important!

SSH flagged topic



New technologies for acquiring in-situ observation datasets to address climate change effects

**Innovation Actions** 





#### **POLICY CONTEXT**

Need for

- Development of new technologies addressing the lack of ground observation (in-situ observation) in hard-to-reach undersampled areas
- A strengthened Global Earth Observation System of Systems (GEOSS)
- Deploying and adding value to environmental observation

#### **Related impacts:**

- 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)



### **EXPECTED OUTCOMES (at least 4)**

- Lower cost of in-situ observation in terms of capital cost, deployment/recovery
- Improved geographical coverage and long-time series of in situ environmental observations;
- Tested and validated new in-situ measurement technologies in hardto-reach under-sampled areas
- ✓ Dedicated technical protocols ensuring validation, interoperability, and synchronisation between in-situ and remote sensing systems in compliance with the GEOSS and Copernicus requirements
- Established collaboration with environmental observation data providers to ensure proper gap filling
- Coherent business model(s) involving industrialists, research centres, and users ensuring the sustainability of systems developed
- Contribute to reinforcing the in-situ component

SCOPE

- The geographical coverage and acquisition of long time series of in-situ observation of the various components of the Earth's systems should be improved in order to ensure a proper monitoring and modelling of the environmental processes.
- In the context of the Copernicus programme, by the GOOS 2030 Strategy and GEO
- Support innovative technological solutions building on cuttingedge technologies in the domain of measurement and testing, big data and ICT to acquire necessary parameters from in-situ measurements
- It covers marine and/or terrestrial measurements in hard-to-reach areas or areas with extreme physical conditions wherethe lack of in-situ data makes global assessment and mitigation of climate change effects very challenging
- The proposals should be conducted, inter alia, in collaboration with Copernicus and other, relevant activities and communities
- The development of new in-situ observation systems should be conducted in close collaboration with the commercial sector.



INDICATIVE BUDGET

3 mln EUR per project (20 mln EUR in total)





Uptake and validation of citizen observations to complement authoritative measurement within the urban environment and boost related citizen engagement

**Innovation Actions** 







#### **POLICY CONTEXT**

Need for:

- Deployment of and adding value to environmental observations
- Improving the uptake and validation of data collected by citizens
- Increasing citizen involvement and engagement
- Contributing to the European Green Deal objectives
- Contributing to a strengthened Global Earth Observation System of Systems (GEOSS).

#### **Related impacts:**

- 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)



### **EXPECTED OUTCOMES (all)**

- A more widespread participation of citizens, in the monitoring, observation, and protection of the urban environment
- Greater availability of qualitative and quantitative in-situ data, contributing to the in-situ component of existing observation systems
- Broader use of data and information collected by citizens in policy and research, complementary to authoritative observations
- Increased use of existing toolkits and development of new toolboxes (methodologies, methods, technologies) for broad use
- ✓ Leveraged use of wearables for citizens and other low-cost technologies in the domain of environmental observation



SCOPE

- Support citizen engagement in the collection and use of data and information within the urban environment
- Contribute to more comprehensive and available data and information to assess the state of the urban environment
- The proposals should ensure that the observations/data will be available on relevant existing platforms (e.g. GEOSS)
- The sustainability of the (existing) validation methods should be ensured for a broader use in the future through toolboxes
- Including to engage citizens through e.g. social innovative, cultural or art-related initiatives
- Particular attention should be directed to cooperation between different groups of engaged citizen observers
- Selected projects are expected to be developed in co-creation and to build upon the results of the WeObserve project and seek to contribute to the New European Bauhaus initiative



**INDICATIVE BUDGET 3-5 mln EUR** per project (**14 mln EUR** in total)





Environmental observations solutions contributing to meeting "One Health" challenges

**Research and Innovation Actions** 







#### **POLICY CONTEXT**

- Need for deployment of and adding value to environmental observations
- Focus on how the use of environmental observation can contribute to the 'One Health' domain

#### **Related impacts:**

- 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)



### **EXPECTED OUTCOMES (at least 3)**

- Better insights in how to foster the use of environmental observation in the large domain of One Health and the areas that could benefit the most from environmental and Earth observation
- ✓ An increase of the capacity to trace environmental parameter changes on how they impact on the emergence of diseases
- Monitoring of the evolution of ecosystem barriers and reinforcement of their sustainability
- Contributing to understanding the emergence and tackling the spread of new infectious diseases affecting human, animal or plant health and building up of more resilient ecosystems;
- Better insights into the concept of alert and early warning systems, including, where possible, in working with the outcomes of the EIC Horizon Prize on Early Warning for Epidemics



SCOPE

- Explore areas of the One Health policy that would benefit from the use of environmental observation and how environmental observations can be used for further shaping policies
- Build on the holistic integrative concept of 'One Health' that includes not only the health of humans, but also of animals, soil and plants including ecosystems and environmental health
- A specific focus of the proposal should be on the monitoring of the evolution of ecosystem barriers in densely populated, industrialised or agricultural areas (...) and their correlation with the emergence or spread of diseases.
- The concept of alert or early warning systems based on observation, including a consideration of disease hazards, human (or animal) exposure and vulnerability
- A particular area of interest in this context is the follow up to the EIC Horizon Prize on Early Warning for Epidemics
- Links to Copernicus, the Global Earth Observation System of Systems (GEOSS), and EGNSS are relevant and expected



**INDICATIVE BUDGET 5 mln EUR** per project (**10 mln EUR** in total)





Piloting approaches and tools to empower citizens to exercise their "data rights" in the area of food and nutrition

**Research and Innovation Actions** 







#### **POLICY CONTEXT**

• The European Green Deal has set Europe on its path to be the first climate neutral continent by 2050 and achieve a green transition that is just, fair and inclusive.



• European Data Strategy: make the EU the leading role model for a society empowered by data, for the benefit of all



#### **EXPECTED OUTCOMES**

- Support the deployment of digital and data technologies as key enablers for the European Green Deal priorities, the EU's Climate ambition and the F2F strategy
- Empower citizens to exercise their "data rights" and to contribute to a just transition of food systems
- Pilot digital solutions in food systems and nutrition with enhanced personal data protection and data sovereignty and which achieve a fairer distribution of wealth and benefits
- Advance alternative approaches to food system data sharing that promote innovation and increase competition



Related impact: More

SCOPE

- Support the implementation of the European Data Strategy in food systems
- Build on recent research and innovation about new architectures for managing online identity, personal and other data as an alternative to current dominant models
- Pilot new approaches to digital solutions in food systems and nutrition which enhance personal data protection and data sovereignty, and which achieve a fairer distribution of wealth and benefit
- **Test and fine-tune new approaches** that address the lack of sovereignty of European citizens on food and nutrition related data
- Demonstrate the feasibility of achieving a more acceptable trade-off between the need for data-driven innovation in food and nutrition and the need for personal data protection and data sovereignty, focussed on 2 key areas of digital transformation and data driven innovation in food systems



4 mln EUR per project

(8 mln EUR per project (8 mln EUR in total)



Important! Multi-actor approach SSH flagged topic Technology readiness level 4-6



# Upscaling (real-time) sensor data for EU-wide monitoring of production and agri-environmental conditions

### **Research and Innovation Actions**

Disclaimer: This presentation is intended to provide a non-comprehensive and feasible overview of the topic; for legally binding information, please, see the <u>Horizon Europe Work Programme for Cluster 6</u>





#### **POLICY CONTEXT**

**Relevant Headline ambitions fostered** 

- Green Deal, Farm-to-Fork- and Biodiversity Strategies in particular
- Digital Age, Data Strategy in particular
- Economy that works for people

#### Contribution to

- → the enhancement of the sustainability performance and competitiveness in agriculture through further deployment of digital and data technologies
- → make agriculture benefit from further deployment and exploitation of Environmental Observation data and products through R&I related to sensors and sensor data



In the focus as well: Effective deployment of digital technologies

#### **EXPECTED OUTCOMES**

- Strengthening capacities for smart farming, and thus to enhance the environmental and economic performance of the agricultural sector.
- Strengthening capacities for agri-environmental (climate) monitoring, particularly of soil and crop conditions.
- Provision of inputs to the work of the Horizon Europe candidate partnership "Agriculture of Data" and the potential R&I mission on soil health.



## SCOPE



Upscaling (real-time) sensor data for EU-wide monitoring of production and agri-environmental conditions

- Innovative approaches to use **in-situ data** collected through sensors used in agricultural production as input to the application of **data technologies**.
- Approaches to **analyse the data in real time** through processing at the source (edge computing) associated with analytics (including AI) in combination with e.g. earth observation data.
- Innovative approaches to benchmark and tailor agricultural production through sensor data sharing at regional level including the development of **business models**.
- Approaches to generate EU-wide data sets through the upscaling of data collected through **sensor used in agricultural production**.
- Demonstration of how sensor-generated data can be further capitalised for the development of the **agricultural sector, other sectors and the public good**.



7.5 mln EUR per project (15 mln EUR in total)



#### Important!

Multi-actor approach JRC may participate



**CLUSTER 6 - INFO DAYS** 

## Thank you! #CL6INFODAY

## **# HorizonEU**

http://ec.europa.eu/horizon-europe

After the Info Days you can:

- Check the **FAQ**
- Contact the **Research Enquiry Service (RES)**
- Contact the National Contact Points (NCPs)



**#CL6INFODAY** 



