Horizon Europe: investing in R&I to shape our future

- The vision:
  "a Europe that protects, a Europe that empowers, a Europe that defends"

  Jean-Claude Juncker

- Tackling climate change (35% budgetary target)

- Helping to achieve Sustainable Development Goals

- Boosting the Union's competitiveness and growth
Lessons Learned
from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens' involvement
- Strengthen international cooperation
- Reinforce openness
- Rationalise the funding landscape

Key Novelties
in Horizon Europe

- European Innovation Council
- R&I Missions
- Extended association possibilities
- Open science policy
- New approach to Partnerships
Horizon Europe: evolution not revolution

Specific objectives of the Programme

Support the creation and diffusion of high-quality knowledge
Strengthen the impact of R&I in supporting EU policies
Foster all forms of innovation and strengthen market deployment

Optimise the Programme’s delivery for impact in a strengthened ERA

Pillar 1
Open Science
European Research Council
Marie Skłodowska-Curie Actions
Infrastructures

Pillar 2
Global Challenges and Industrial Competitiveness
• Health
• Inclusive and Secure Society
• Digital and Industry
• Climate, Energy and Mobility
• Food and natural resources
Joint Research Centre

Pillar 3
Open Innovation
European Innovation Council
European innovation ecosystems
European Institute of Innovation and Technology

Strengthening the European Research Area
Sharing excellence
Reforming and Enhancing the European R&I system
CLUSTER 5: Food and natural resources: Why a single cluster?

- **Addressing under one cluster the interlinked challenges** of eco-systems, health of our planet, sustainable agricultural, forest and marine production, and sustainable consumption.

- **Strong linkages with key EU programmes and SDGs**

- **Bringing together the concepts of circular economy, bioeconomy and blue economy**, with a coherent contribution of R&I to EU policies in these areas.

- **Mainstreaming** a participatory approach to R&I, working on the overall **system**, and exploitation of big data.
CLUSTER 5 – What moves in / out

H2020 LEIT

H2020 SC2

H2020 SC5

Biotechnology

FOOD and NATURAL RESOURCES

Cultural Heritage

Raw Materials

Climate Science

INCLUSIVE and SECURE SOCIETY

DIGITAL and INDUSTRY

CLIMATE, ENERGY AND MOBILITY

European Commission
Key Facts and figures

• **Natural Resources**: planetary boundaries are exceeded. We operate beyond safe limits for Genetic biodiversity, Nitrogen and Phosphorus cycles, Land-system change and Climate change.

• **Agriculture and Forestry**: highly diverse sectors covering 85% of the EU territory (agriculture 50 %), driving rural economies; the agri-food sector provides 44m jobs in the EU; EU agriculture contributes to 10% of GHG emissions;

• **Food production**: 12 plant species provide for ¾ of world food production. From farm to fork we use 70% of fresh water resources (Europe: 50%) and 30% of energy. By 2050 we need to feed 9 billion people on the planet and meet 60% more food demand.

• **Oceans**: cover ¾ of the Earth’s surface, but largely unknown; Provide half of the oxygen and the largest carbon sink and host the greatest biodiversity of the planet.

• **Circular economy**: only 40% of EU waste is reused or recycled; the circular economy resource productivity growth potential is up to 3 % annually in the EU;
Clusters and Sustainable Development Goals

Cluster 5: Food and natural resources
CLUSTER 5 Food and Natural Resources
How will it be implemented?

Collaborative projects remain the default:

- Consortiums of at least three independent legal entities and with at least one of them established in a Member State (art. 18.2 FP/RfP)
- Competitive and Open calls for proposals, as regular calls, calls for missions and partnerships

The Work Programme, endorsed by the Programme Committee for this cluster, will identify topics for each call.
CLUSTER 5: Food and Natural Resources: synergies with other MFF programs

- Under the European Agricultural Guarantee Fund and the European Agricultural Fund for Rural Development the implementation and deployment of innovative solutions can be promoted. The European Innovation Partnership (EIP-AGRI) bridges research and practice through the involvement of all actors (researchers, farmers, advisors, etc.).

- European Maritime and Fisheries Fund (EMFF) supports the rolling out of novel technologies and innovative products, processes and services.

- The European Regional Development Fund (ERDF) may support the take-up of results emerging from this cluster.

- LIFE for links to better environmental policy implementation and deployment at national and (inter-)regional scale where it can help address environmental, climate or clean energy transition issues.

- The InvestEU Fund can finance innovators and innovations coming from this cluster, to enable their roll-out and scale-up.

- The Single Market Programme will support the competitiveness of SMEs and entrepreneurship (e.g. Enterprise Europe Network).
CLUSTER 5: Food and natural resources: what is in it?

7 intervention areas:

• Environmental observation
• Biodiversity and natural capital
• Agriculture, forestry and rural areas
• Sea and oceans
• Food systems
• Bio-based innovation systems
• Circular systems
CLUSTER 5: Food and natural resources: intervention areas in key words

Environmental observation (SP Annex I, 5.2.1)

- Underpinning R&I through Earth Observation for the sustainable use and monitoring of food and natural resources and more broadly the Earth System;
- Deploying, exploiting and up taking user-oriented technologies and applications;
- Addressing gaps in Earth Observation through GEOSS and EuroGEOSS, including in support of COPERNICUS products and services.
CLUSTER 5: Food and natural resources: intervention areas in key words

Biodiversity and natural capital (SP Annex I, 5.2.2)

- State, value and trends of biodiversity, ecosystems and their services, natural capital and the ‘planetary boundaries’ & eco-toxicology of new compounds;

- Mainstreaming biodiversity and ecosystems services in decision making, enhancing the science-policy interface, including in international processes;


- Governance aspects of transition to sustainability – in economic, social and natural systems across scales local to global.
CLUSTER 5: Food and natural resources: intervention areas in key words

Agriculture, forestry and rural areas (SP Annex I, 5.2.3)

- Sustainable management of land and efficient use of natural resources (e.g. soils, water, nutrients and biodiversity including genetic resources);
- Diverse and resilient production systems using and delivering a range of ecosystems services; the potential of agriculture and forestry as carbon sinks;
- Integrated approaches towards plant pests and diseases; animal health and welfare; tackling antimicrobial resistance and biological and agro-chemical hazards;
- Digital innovations in farming, forestry and across value chains in rural areas;
- Rural development, skills and Agricultural Knowledge and Innovation Systems (AKIS).
CLUSTER 5: Food and natural resources: intervention areas in key words

Sea and oceans (SP Annex I, 5.2.4)

- Sustainably manage, protect and restore marine and coastal ecosystems and prevent marine pollution;
- Sustainably unlock the vast and unexploited potential of seas and oceans, producing more food, while alleviating pressure on land and fresh water resources;
- Partnering approaches and macro-regional strategies, ocean governance and UN Decade of Ocean Science for Sustainable Development.
CLUSTER 5: Food and natural resources: intervention areas in key words

Food systems (SP Annex I, 5.2.5)

- Food systems transformation – environmentally sustainable, circular and resource efficient food systems from land and sea;
- Healthy diets and personalised nutrition;
- Food safety and authenticity;
- Consumer behaviour, lifestyle and motivations for better health and environmental sustainability along the food value chain
CLUSTER 5: Food and natural resources: intervention areas in key words

Bio-based innovation systems (SP Annex I, 5.2.6)

- Laying the foundations for the transition away from fossil-based into bio-based materials and products;
- Capitalising on the potential of living resources, life sciences and industrial biotechnology for new discoveries, products and processes;
- New economic activities and employment to regions, cities and revitalising rural and coastal areas;
- Strengthen the circularity of the bioeconomy.
CLUSTER 5: Food and natural resources: intervention areas in key words

Circular systems (SP Annex I, 5.2.7)

- Systemic transition to a resource-efficient and circular economy;
- Metrics, indicators and governance, involving new business models, new products and services, new financing and new multi-stakeholder and cross-value chain collaborations;
- Sustainable and regenerative development of cities and peri-urban areas and regions;
- Eco-innovation for prevention and remediation of environmental pollution;
- Circular use of water resources.
CLUSTER 5: Food and natural resources: What’s new?

More **impact-focused R&I** – supporting the implementation of EU policy goals like the shift towards a circular economy, bio-economy and blue economy

New **holistic / system-wide / integrated view**

More **synergies** across R&I areas, along the full innovation cycle:

- between intervention areas (e.g. circular and bio-based systems)
- between clusters (e.g. digital and agriculture; marine & maritime)
- between pillars (through wide / joint Missions)
- with other EU / funding instruments (e.g. EARD, EMFF)
Thank you

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