



# HORIZON EUROPE

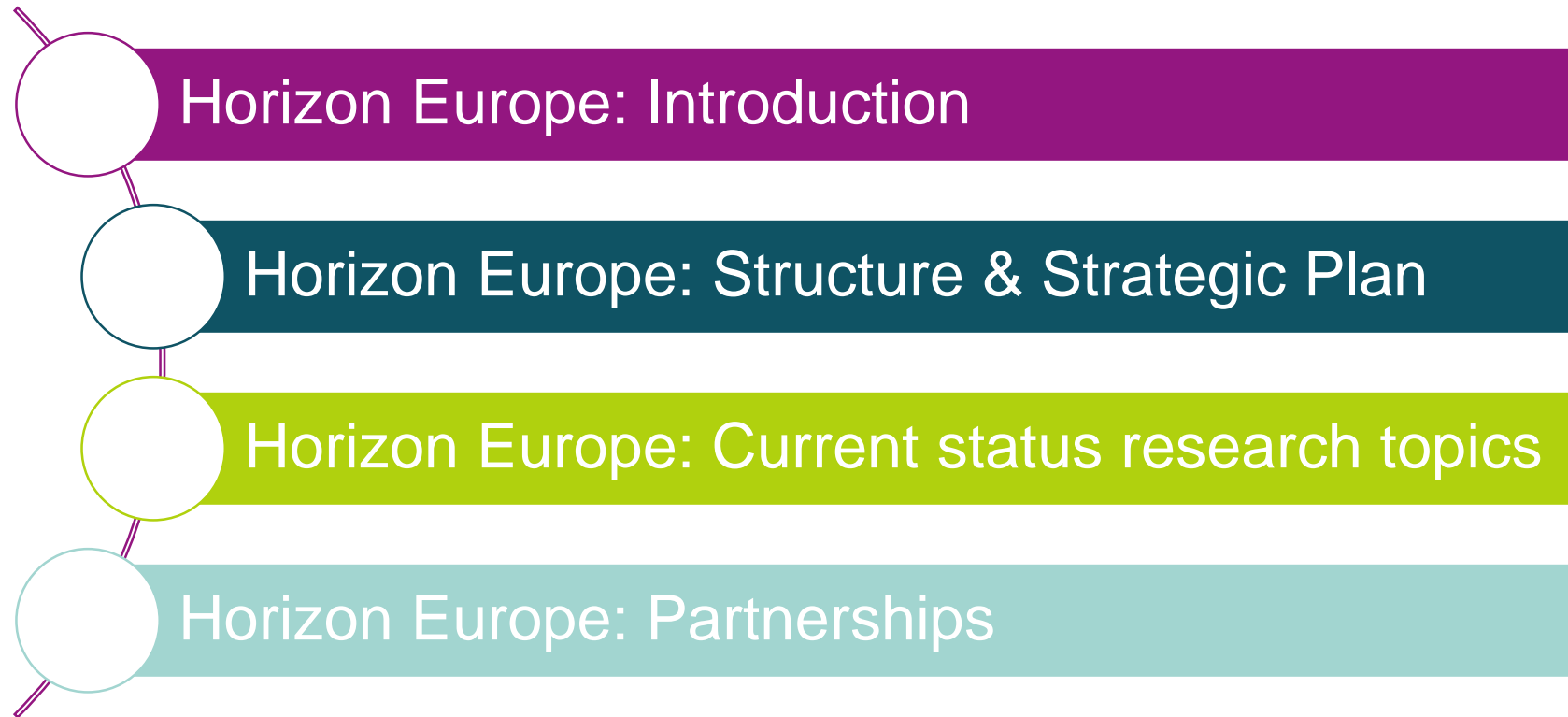
**THE EU  
RESEARCH & INNOVATION  
PROGRAMME**

2021 – 2027

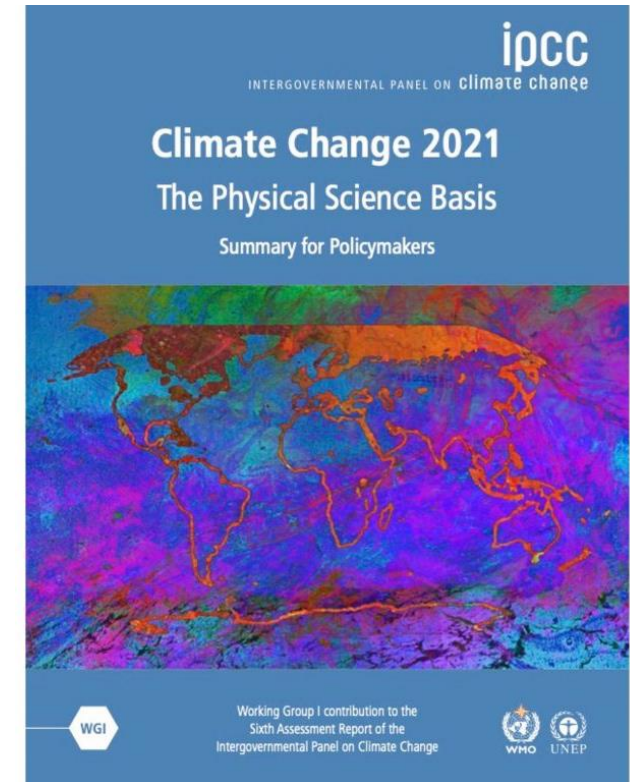
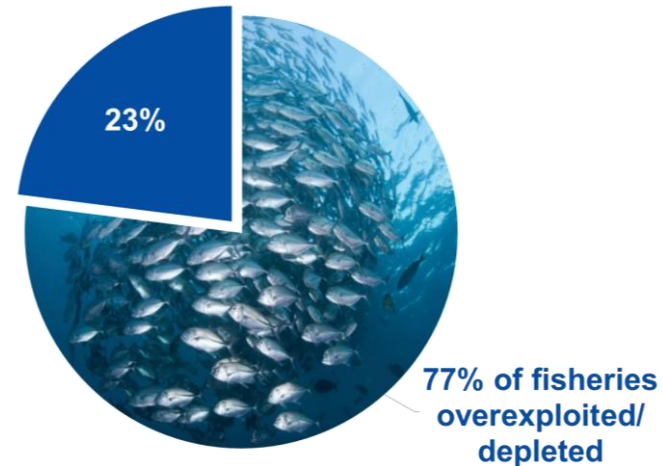
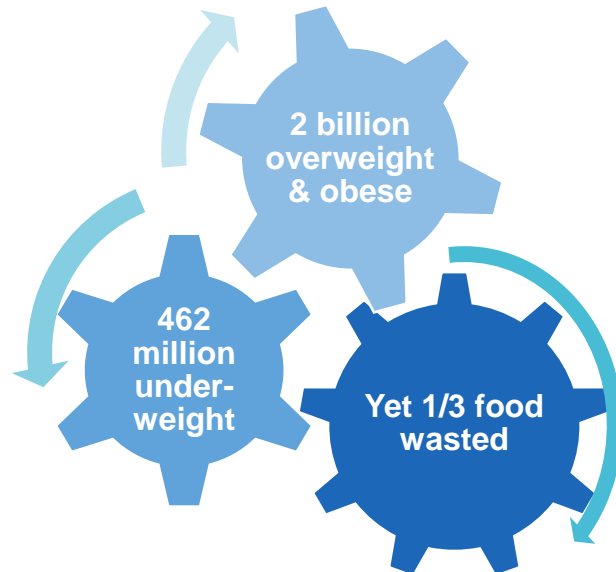
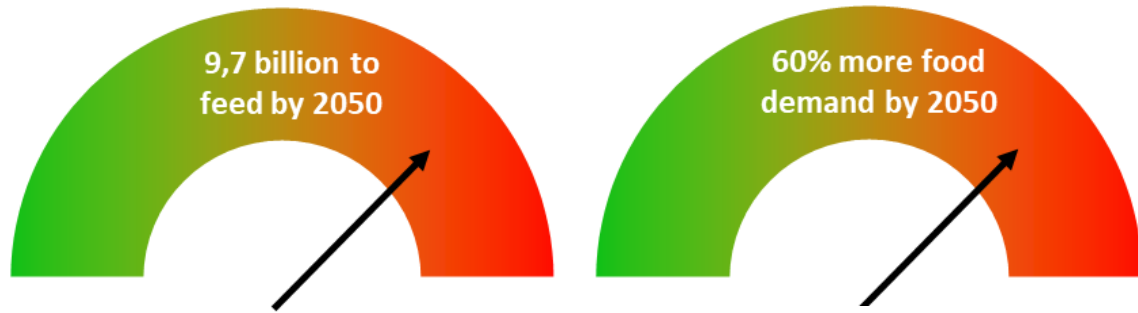


*Research and  
Innovation*

# Cluster 06 presentation



# Food Systems face the “perfect storm”





“ *With its potential to connect and implement transformative policies holistically, the bioeconomy will contribute to all dimensions and objectives of the European Green Deal. Research and innovation will enable Europe to lead the green and digital transition.* ”

**Mariya Gabriel**, EU Commissioner for Innovation, Research, Culture, Education and Youth

Research and  
Innovation

### Bioeconomy – a blueprint for green growth which:

- Holistically addresses the economic, social and environmental aspects
- Contributes to a climate-neutral future
- Promotes resource efficiency and circularity
- Reduces dependence on non-renewable resources
- Safeguards biodiversity and ecosystems
- Provides opportunities for fair and just transition
- Green business opportunities for SMEs

See Factsheet on **How the bioeconomy contributes to the Green Deal** (<https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/66722c8d-2e03-11eb-b27b-01aa75ed71a1>)

# Horizon Europe Missions



Adaptation to  
climate change,  
including societal  
transformation



Cancer



Healthy oceans,  
seas, coastal  
& inland waters



Climate-neutral  
& smart cities



Soil health  
& food



# Farm to Fork at the heart of the European Green Deal



## 2030 Targets for sustainable food production

### PESTICIDES



Reduce the overall use and risk of chemical and hazardous pesticides

### NUTRIENT LOSSES



Reduce nutrient losses by 50% whilst retaining soil fertility, resulting in 20% less fertilisers

### ANTIMICROBIALS



Reduce sales of antimicrobials for farmed animals and aquaculture

### ORGANIC FARMING



Increase the percentage of organically farmed land in the EU

# The 2018 EU Bioeconomy Strategy and Action Plan

- **SUSTAINABILITY and CIRCULARITY** at its core
- **SYSTEM-wide approach** - policies across sectors
- **Addresses the issue of bioeconomy growth within planetary boundaries**
- **A set of 14 well-defined actions** including a monitoring system with clear indicators



---

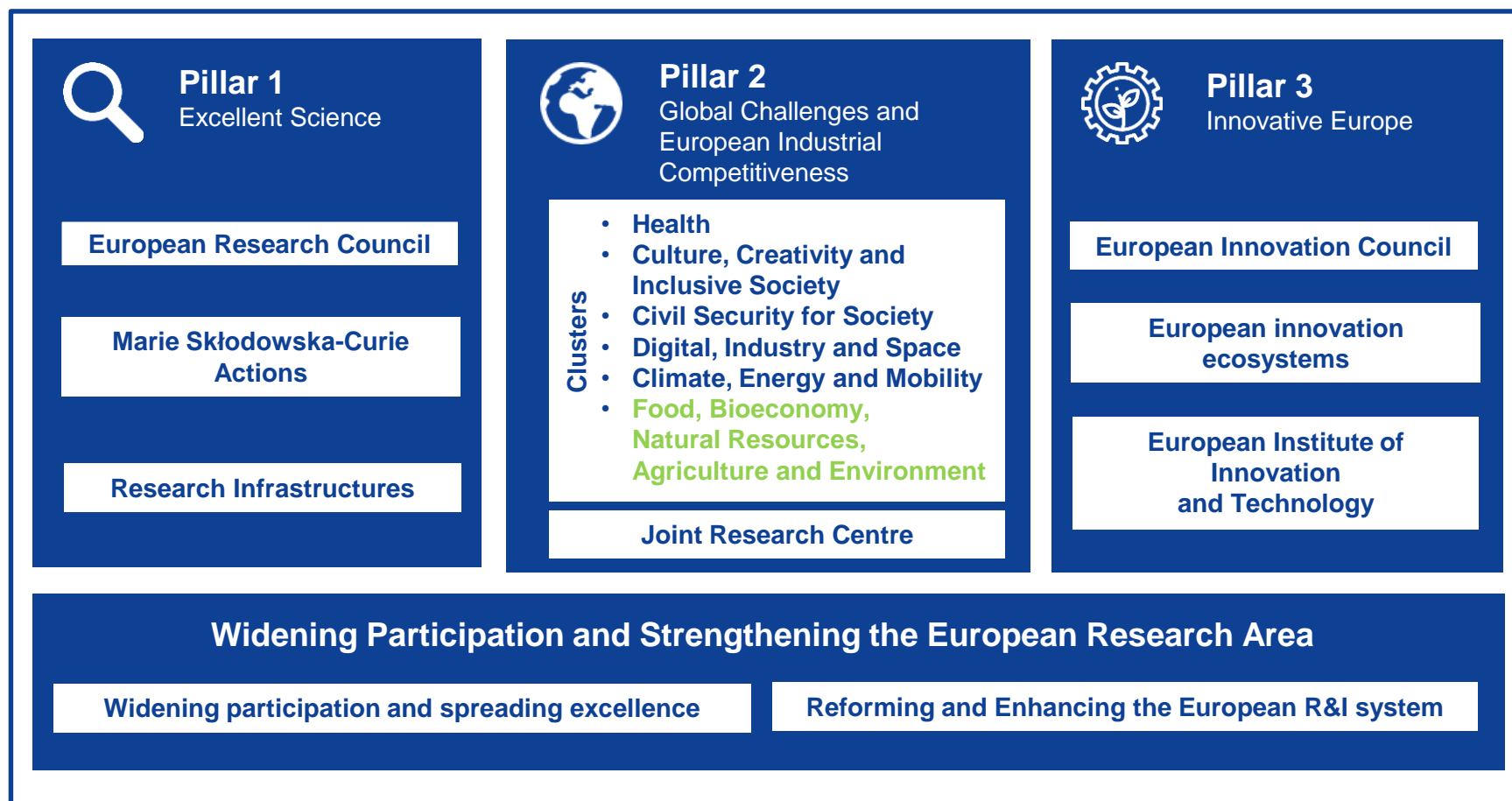
HE CLUSTER 6

# Structure & Strategic Plan





# Horizon Europe: structure & resources



**EUR 8,952 billion** under Horizon Europe  
for Cluster 6 “Food, Bioeconomy, Natural Resources, Agriculture and Environment”

# Strategic Plan 2021-2024 and Cluster 6

- Four **Key Strategic Orientations** defined on the basis of political priorities (EGD) and the post-COVID recovery plan – will guide the Horizon Europe programmes until 2024.
- **Cluster 6 expected impacts contribute mainly to** the Key Strategic Orientation of *“Restoring Europe’s ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment”*
- Cluster 6 will support these Impact Areas:
  - Enhancing ecosystems and biodiversity on land and in waters
  - Clean and healthy air, water and soil
  - Sustainable food systems from farm to fork on land and sea
  - Circular and clean economy



# Cluster 6 - FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE & ENVIRONMENT: From expected impacts to destinations

## Strategic Plan

## Work Programme

**Impact 1** Climate neutrality and adaptation to climate change

- Destination 5: Land, oceans and water for climate action

**Impact 2** Preservation and restoration of biodiversity and ecosystems

- Destination 1: Biodiversity and ecosystem services

**Impact 3** Sustainable and circular management of natural resources; tackling pollution; bioeconomy

- Destination 3: Circular economy and bioeconomy sectors
- Destination 4: Clean environment and zero pollution

**Impact 4** Food and nutrition security for all from sustainable food systems from farm to fork

- Destination 2: Fair, healthy and environmentally-friendly food systems from primary production to consumption

**Impact 5** Balanced development of rural, coastal and urban areas

- Destination 6: Resilient, inclusive, healthy and green rural, coastal and urban communities

**Impact 6** Innovative governance models enabling sustainability, environmental observation

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



CLIMATE  
PACT AND CLIMATE  
LAW

PROMOTING  
CLEAN  
ENERGY

INVESTING IN  
SMARTER, MORE  
SUSTAINABLE  
TRANSPORT

PROTECTING NATURE

STRIVING  
FOR GREENER  
INDUSTRY

FROM FARM  
TO FORK

ELIMINATING  
POLLUTION

LEADING THE  
GREEN CHANGE  
GLOBALLY

ENSURING  
A JUST TRANSITION  
FOR ALL






MAKING  
HOMES ENERGY EFFICIENT

FINANCING  
GREEN  
PROJECTS

# Cluster 6 & The European Green Deal



# Cross-cluster complementarities

Other Clusters	Examples Complementarity to Cluster 06
 <p>1. Health</p>	<ul style="list-style-type: none"> <li>- Nutrition, food safety on health, microbiome, consumer behavior, pollution reduction...etc.</li> </ul>
 <p>2. Cluster, Creativity, And Inclusive Society</p>	<ul style="list-style-type: none"> <li>- Right to live in a healthy environment</li> <li>- Balanced development of rural, coastal and urban areas</li> </ul>
 <p>3. Civil Security for Society</p>	<ul style="list-style-type: none"> <li>- Prevention, adaptation and mitigation of possible disaster impacts by protecting the environment</li> </ul>
 <p>4. Digital, Industry and Space</p>	<ul style="list-style-type: none"> <li>- Biodiversity monitoring and Genomics data, Digitalisation, AI and Robotics in knowledge generation</li> </ul>
 <p>5. Climate, Energy and Mobility</p>	<ul style="list-style-type: none"> <li>- Adaptation of water, agriculture and forestry to climate change</li> <li>- Circularity for improving overall energy and resources efficiency and thus also carbon reduction</li> </ul>



---

HE CLUSTER 6

# Current status – research topics



# Cluster 6 WP 2021-2022: 2021 calls

Name of the destination	Call identifier	Opening date	Deadline	Number of topics
1. Biodiversity and Ecosystem Services	HORIZON-CL6-2021-BIODIV-01	22/06/2021	6/10/2021	21
	HORIZON-CL6-2021-BIODIV-02	22/06/2021	22/07/2021	1
2. Fair, healthy and environmentally-friendly food systems from primary production to consumption	HORIZON-CL6-2021-FARM2FORK-01	22/06/2021	6/10/2021	19
3. Circular economy and bioeconomy sectors	HORIZON-CL6-2021-CircBio-01	22/06/2021	6/10/2021	9
4. Clean environment and zero pollution	HORIZON-CL6-2021-ZEROPOLLUTION-01	22/06/2021	6/10/2021	10
5. Land, oceans and water for climate action	HORIZON-CL6-2021-CLIMATE-01	22/06/2021	6/10/2021	10
6. Resilient, inclusive, healthy and green rural, coastal and urban communities	HORIZON-CL6-2021-COMMUNITIES-01	22/06/2021	6/10/2021	6
7. Innovative governance, environmental observations and digital solutions in support of the Green Deal	HORIZON-CL6-2021-GOVERNANCE-01	22/06/2021	6/10/2021	28
TOTAL				104

# Cluster 6 WP 2021-2022: 2022 calls

Name of the destination	Call identifier	Opening date	Deadline	Number of topics
1. Biodiversity and Ecosystem Services	HORIZON-CL6-2022-BIODIV-01	28/10/2021	15/02/2022	10
	HORIZON-CL6-2022-BIODIV-02	28/10/2021	15/02/2022	3
2. Fair, healthy and environmentally-friendly food systems from primary production to consumption	HORIZON-CL6-2022-FARM2FORK-01	28/10/2021	15/02/2022	15
	HORIZON-CL6-2022-FARM2FORK-02	28/10/2021	15/02/2022	5
3. Circular economy and bioeconomy sectors	HORIZON-CL6-2022-CIRCBIO-01	28/10/2021	15/02/2022	7
	HORIZON-CL6-2022-CIRCBIO-01	28/10/2021	15/02/2022	6
4. Clean environment and zero pollution	HORIZON-CL6-2022-ZEROPOLLUTION-01	28/10/2021	15/02/2022	4
5. Land, oceans and water for climate action	HORIZON-CL6-2022-CLIMATE-01	28/10/2021	15/02/2022	5
6. Resilient, inclusive, healthy and green rural, coastal and urban communities	HORIZON-CL6-2022-COMMUNITIES-01	28/10/2021	15/02/2022	5
	HORIZON-CL6-2022-COMMUNITIES-02	28/10/2021	15/02/2022	2
7. Innovative governance, environmental observations and digital solutions in support of the Green Deal	HORIZON-CL6-2022-GOVERNANCE-01	28/10/2021	15/02/2022	15
TOTAL				77



# Food 2030 in Cluster 6

The approach should be “systemic” inter/transdisciplinary and multi-actor including primary producers, processors, retailers, food-services, civil society, researchers, policymakers, etc.

Placed-based approaches will be key to testing, demonstrating, experimenting, deploying, partnering, learning, sharing !!



Food 2030 pathways	 Nutrition	 Climate	 Circularity	 Innovation
Governance change and systems	+++	+++	+++	+++
Urban food transformation systems	++	+++	+	+++
Food from oceans and freshwater resources	++	+++	++	++
Alternative dietary shift proteins and	+++	+++	++	+++
Food waste and resource efficiency	+	+++	++	++
The Microbiome world	+++	+++	+++	+
Healthy, sustainable and personalised nutrition	+++	++	+	++
Food safety systems of the future	++	+++	++	++
Food systems Africa	+++	+++	+++	+++
Food systems and data	+++	+++	+++	+++

# Some key R&I priorities/topics

2021	2022
Filling knowledge gaps on <b>alternative proteins</b> and <b>dietary shift</b>	Building <b>alternative protein</b> -friendly sustainable and healthy food environments
Evidence-based decision-making to change social norms towards <b>zero food waste</b>	R&I for <b>food losses and waste</b> prevention/reduction through harmonised measurement/monitoring
<b>Microbes</b> for healthy and sustainable food and diets	<b>Microbiomes</b> in food production systems
Transition to <b>healthy and sustainable dietary behaviour</b>	Combatting all forms of <b>malnutrition</b>
Identification, assessment and management of existing and emerging <b>food safety</b> issues	Integrated surveillance system to prevent and reduce <b>diet-related non communicable diseases</b>
Integrated <b>urban food system policies</b> – how cities and towns can transform food systems for co-benefits	Social innovation in <b>food sharing</b> to strengthen <b>urban communities' food resilience</b>
Increasing the <b>transparency of EU food systems</b> to boost health, sustainability and safety of products, processes and diets	Effective systems for <b>authenticity</b> and <b>traceability</b> in the food system
Furthering <b>food systems science</b> and federating researchers across the European Research Area Fostering <b>strategic advice</b> and <b>synergies</b> between <b>national and EU Research</b>	African <b>food cities</b>
<b>Sea to fork transparency</b> and consumer engagement	Support for international research on <b>infectious animal diseases</b>
<b>Digital</b> transition supporting <b>inspection</b> and <b>control</b> for sustainable fisheries	<b>Biosecurity, hygiene, disease prevention</b> and <b>animal welfare</b> in aquaculture
<b>One health approach</b> for food nutrition security and sustainable agriculture	Mobilization of society to <b>transform food systems</b> for co-benefits
<b>Furthering food systems science</b> and federating researchers Mapping and improving the <b>data economy for food systems</b> Preparatory action for the <b>Horizon Europe Food System Partnership</b>	Piloting approaches and tools to <b>empower citizens to exercise their “data rights”</b> in the area of food and nutrition
Strengthening <b>bioeconomy innovation</b> and deployment	Integrated and <b>sustainable freshwater bioeconomy</b>



# Cluster 6 – Bioeconomy

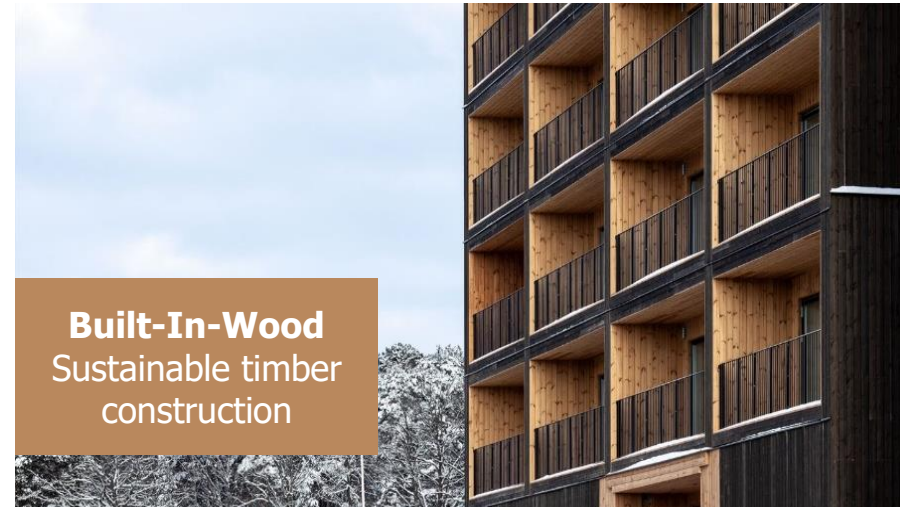
Addressed across all Destinations due to the horizontal nature of the policy

- Examples of **bioeconomy topics** and **their expected impacts** in WP 2021-22:
  - Identification and development of non-plant biomass feedstock for industrial applications;
  - Marginal lands and climate-resilient and biodiversity-friendly crops for sustainable industrial feedstocks
  - Deployment of small-scale innovative bio-based solutions in EU rural areas

# Info-days for Cluster 6 2022 topics

- Your opportunity to participate!
- 25-26 October [Save the date: Info-days for Horizon Europe Cluster 1 and Cluster 6 to take place between 25 & 29 October 2021 | European Commission \(europa.eu\)](#)
- Short plenary session + thematic sessions on 77 topics
- Brokerage event

# Examples of innovation in action



---

HE CLUSTER 6

# Partnerships



# Horizon Europe Partnerships

## HORIZON EUROPE PILLAR II - Global challenges & European industrial competitiveness

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*
Pandemic Preparedness* <i>Co-funded or co-programmed</i>	Processes4Planet	Built4People	
	Global competitive space systems**	Clean Energy Transition	
		Driving Urban Transitions	

- Institutionalised Partnerships (Art 185/7)
- Institutionalised Partnerships / EIT KICs
- Co-Programmed
- Co-Funded

\* Calls with opening dates in 2023-24  
 \*\* Calls with opening dates not before 2022

## PILLAR III - Innovative Europe

EIT (KNOWLEDGE & INNOVATION COMMUNITIES)	SUPPORT TO INNOVATION ECOSYSTEMS
InnoEnergy	Innovative SMEs
Climate	
Digital	
Food	
Health	
Raw Materials	
Manufacturing	
Urban Mobility	
Cultural and Creative Industries	

## CROSS-PILLARS II & III

European Open Science Cloud



# Example: Food Systems Partnership



*“To collectively develop and implement an EU-wide research and innovation partnership **to accelerate the transition towards healthy diets that are safe and sustainably produced in resilient EU and global food systems**”*

## 4 thematic areas for transformative R&I

1. Change the way  
*we eat*

2. Change the way  
*we provide food*

3. Change the way  
*we connect citizens  
to food*

4. Change the way  
*we govern the food  
system*



---

Thank you.

