



“Agrifood R&D trends topics: le nuove frontiere tecnologiche dell’agroalimentare italiano per raccogliere le sfide del **PNRR**”,

CIBUS Parma, 4 Maggio, 2022

CL.USTER A.GRIFOOD N.AZIONALE -
CL.A.N.



Mariya Gabriel, European Commissioner
for Innovation, Research, Culture,
Education and Youth

“The programme aims at giving Europe a new push to a global positioning. Horizon Europe is to be the biggest and most ambitious EU Research Innovation programme ever. It builds on the success of Horizon 2020 and improves it further by fostering a stronger support to breakthrough innovation through the European Innovation Council, by creating greater impact through R&I missions and by streamlining partnerships landscape.”

HORIZON EUROPE

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on
defence research
& development*

Research
actions

Development
actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications



Pillar I EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures



Pillar II GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre



Pillar III INNOVATIVE EUROPE

European Innovation
Council

European Innovation
Ecosystems

European Institute of
Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

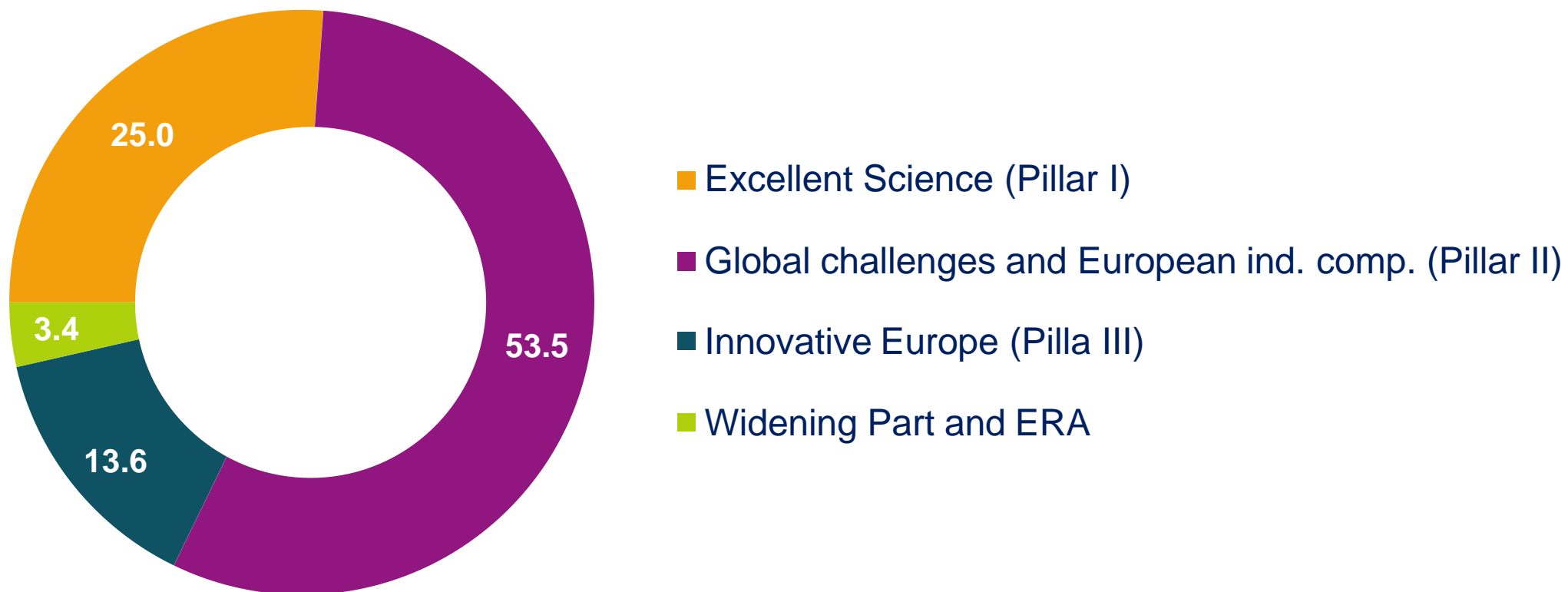
Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Horizon Europe Budget: € 95.5 billion (2021-2027)

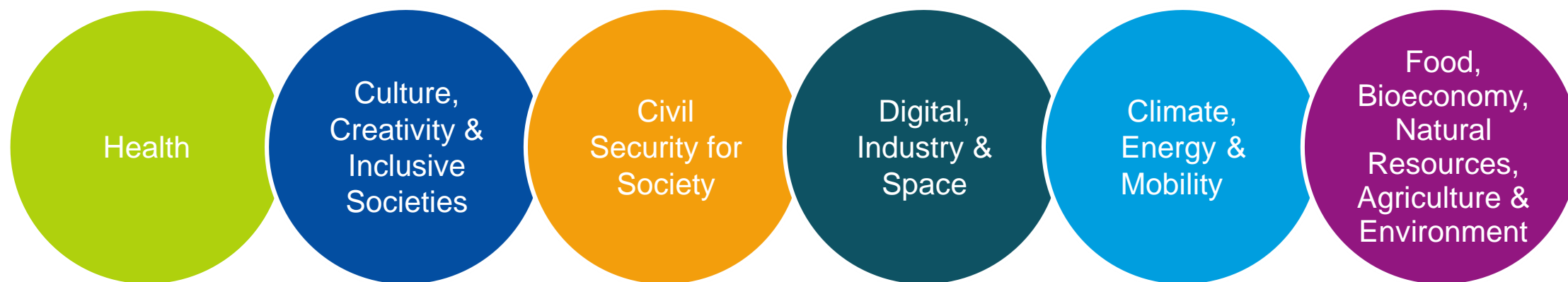
(including € 5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)



Pillar II

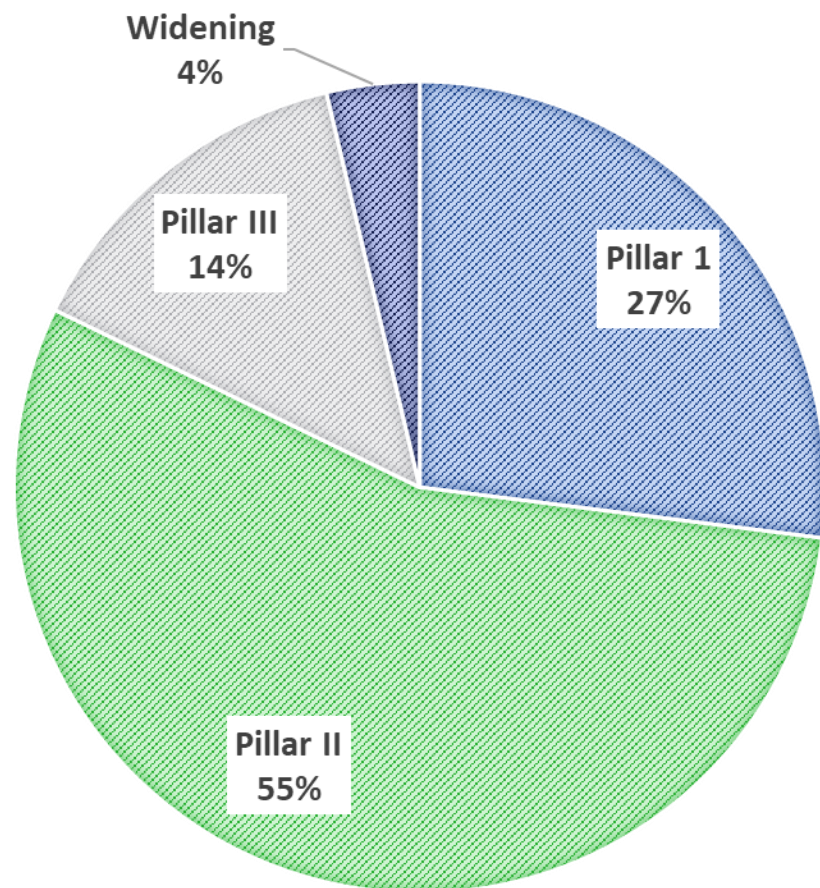
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS:

.... boosting **key technologies** and solutions underpinning **EU policies & Sustainable Development Goals** (6 clusters and JRC – non-nuclear direct actions)

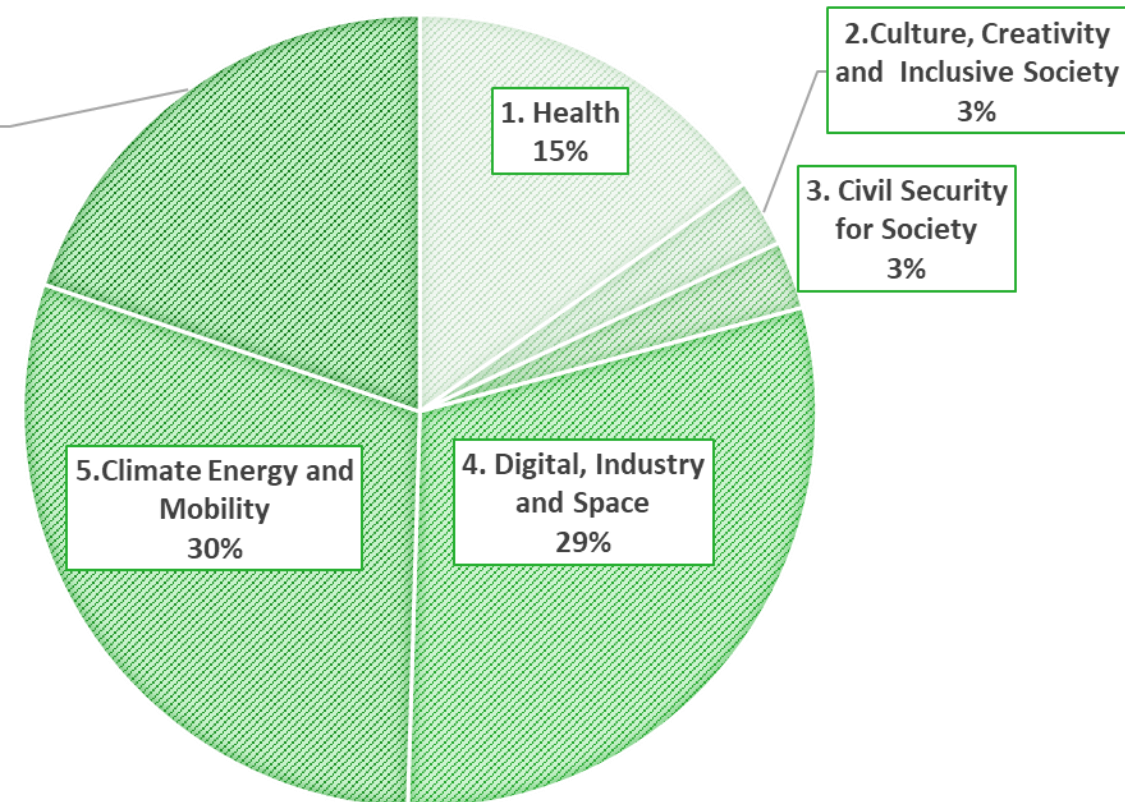


€ 53.5 billion

Budget at a glance



6. Food, Bioeconomy, Natural Resources, Agriculture and Environment
20%
8,952 mlr €



Cluster 6 mandate

Our Mandate



The Horizon Europe mandate to Cluster 6 is to provide opportunities to enhance and balance environmental, social and economic goals and to set human economic activities on a path towards **sustainability**.

Our Mandate



The underlying paradigm of Cluster 6 is therefore the need for a **transformative change of the EU economy and society** aimed at reducing **environmental degradation**, halting and **reversing the decline of biodiversity** and to better manage **natural resources** while serving the EU's **climate objectives** and ensuring **food** and **water** security.

Our Mandate



The Strategic Plan has identified six long term targeted impacts where Cluster 6 will make a difference.

Our Mandate



Our Mandate

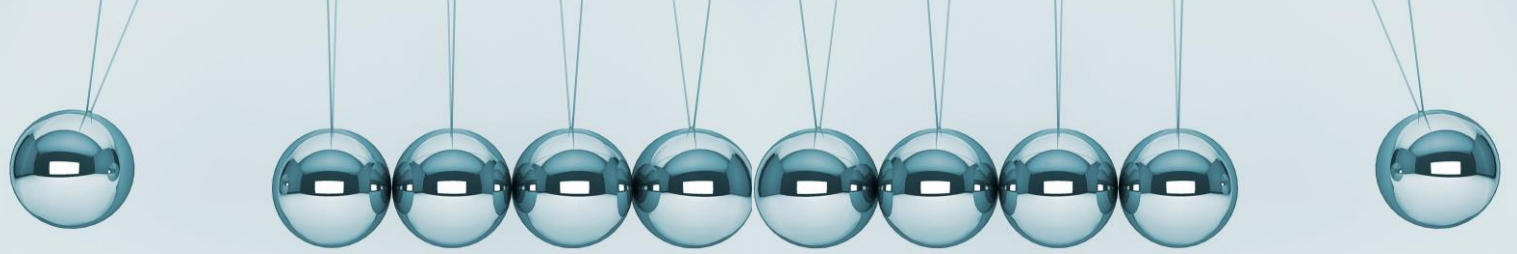


Our Mandate





Cluster 6 Impacts



These impacts are:



Climate neutrality is achieved by reducing GHG emissions, maintaining natural carbon sinks, and enhancing the sequestration and storage of carbon in ecosystems, including by unfolding the potential of nature based solution, production systems on land and at sea as well as rural and coastal areas, where adaptations to climate change are also being fostered.



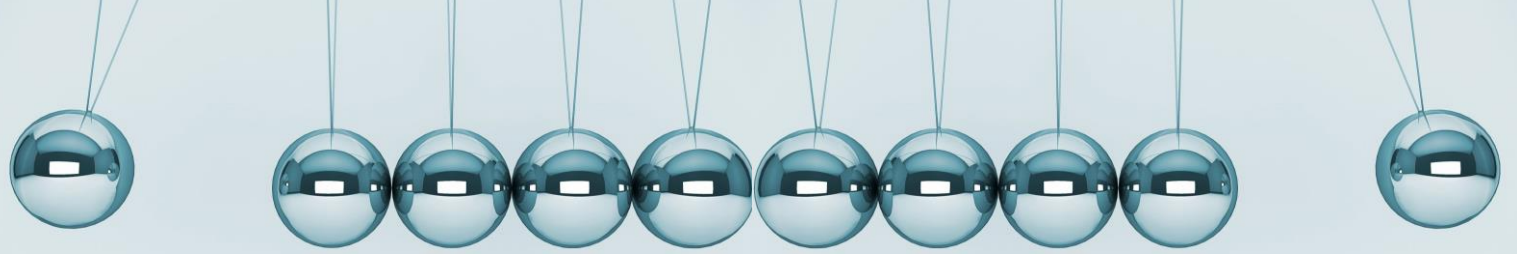
Biodiversity is back on a path to recovery, and ecosystems and their services are preserved and sustainably restored on land, inland water and at sea through improved knowledge and innovation.



Sustainable and circular management and use of natural resources as well as **prevention and removal of pollution** are mainstreamed, **unlocking the potential of the bioeconomy**, ensuring competitiveness and guaranteeing healthy soil, air, fresh and marine water for all, through better understanding of planetary boundaries and deployment of innovative technologies and other solutions, notably in primary production, forestry and bio-based systems.



Cluster 6 Impacts



-  **Food and nutrition security** for all within planetary boundaries is ensured through knowledge, innovation and digitalisation in agriculture, fisheries, aquaculture and food systems, which are sustainable, resilient, inclusive, safe and healthy from farm to fork
-  **Rural, coastal and urban areas are developed in a sustainable**, balanced and inclusive manner thanks to a better understanding of the environmental, socio-economic, behavioural and demographic drivers of change as well as deployment of digital, social and community-led innovations
-  **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

Cluster 6 activities will sustain the ambition of the EU on international fora in areas of paramount importance such as biodiversity, climate change, the management of natural resources, sustainable agriculture, food safety and food and nutrition security.

HORIZON EUROPE



Partnerships and Missions

“The programme aims at giving Europe a new push to a global positioning.

*Horizon Europe is to be the biggest and **most ambitious EU Research Innovation programme ever.** It builds on the success of Horizon 2020 and improves it further by fostering a stronger support to breakthrough innovation through the European Innovation Council, by creating greater impact through R&I missions and by streamlining partnership landscape.”*



OUTPUTS for single DESTINATION

ITA

		BIODIV	FARM2FORK	CIRCBIO	ZEROPOLLUTION	CLIMATE	COMMUNITIES	GOVERNANCE
TASSO SUCCESSO	#	40,0%	17,1%	6,6%	32,3%	18,8%	17,8%	47,9%
	€	41,4%	15,3%	4,7%	23,4%	26,3%	12,6%	46,9%
% DESTINATION SUL TOTALE	#	17,1%	23,0%	5,9%	9,0%	7,2%	7,2%	30,6%
	€	20,1%	23,3%	5,1%	6,9%	10,0%	5,5%	29,2%

HORIZON EUROPE



Partnerships and Missions

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Overview of 49 candidate European Partnerships

HORIZON EUROPE PILLAR II - Global challenges & European industrial competitiveness

PILLAR III - Innovative Europe

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

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

CROSS-PILLARS II & III

European Open Science Cloud

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

Partnership: Key Principles



EU co-funding is a constant rate (typically 30%)

Each consortium agree internally on how the EU co-funding is best used

All co-funded European Partnerships will have corresponding topics in HE Work Programme



New approach to European Partnerships

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key Features

- **Strategic orientation**
- **Systemic approach**
- **Simple architecture and toolbox**
- **Common set of criteria for the life-cycle**

CO-PROGRAMMED

Based on Memoranda of Understanding/contractual arrangements; implemented independently by the partners and by Horizon Europe

CO-FUNDED

Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

INSTITUTIONALISED

Based on long-term dimension and need for high integration; partnerships based on Art 185/187 of TFEU and the EIT legal acts for 2021-2027



Cluster 6: Co-funded partnerships

Co-funded partnership	Work Programme where the topic is introduced
Rescuing biodiversity to safeguard life on Earth	2021-2022
Water Security for the Planet (Water4All)	2021-2022
A climate neutral, sustainable and productive Blue Economy	2021-2022
Accelerating farming systems transition: agroecology, living labs and research infrastructures	2023-2024
Animal health: fighting infectious diseases	2023-2024
Agriculture of data	2023-2024
Sustainable food systems for people, planet and climate	2023-2024

Nel Cluster 6 sono previste 8 partnership in totale:

Biodiversa: Partnership co-funded. Partecipa il MUR e il MITE. Il MIPAAF è interessato, ma non partecipa direttamente. Il budget complessivo impegnato dal MUR è 25 M€ (cash and kind) (165 M€ la Commissione). Il MITE apporterà risorse in kind.

Sustainable Blue Economy: Partnership co-funded. Partecipa il MUR che si è candidato al coordinamento della partnership (*.. con la Norvegia*). Il budget complessivo impegnato dal MUR è 20 M€ (cash and kind) (150 M€ la Commissione). La scadenza del **bando HE** è fissata al 20 febbraio 2022, dovrebbe partire in autunno 2022-inizio 2023.

Water4All: Partnership co-funded. Partecipa il MUR, coinvolto il CNR e ISPRA. Il budget complessivo impegnato dal MUR è 25 M€ (126 M€ la Commissione).

Circular Bio-based Europe: Partnership istituzionalizzata. Non è prevista la partecipazione diretta degli Stati membri che potranno soltanto nominare un proprio rappresentante in un organo consultivo denominato Member States Representatives Group. La Commissione investirà 1 miliardo di euro a condizione che anche gli altri partner investano almeno la stessa cifra.

Accelerating farming systems transition (agro-ecology): Partnership co-funded. Dovrebbe partire nel 2023/24. Sono interessati sia il MUR che il MIPAAF. Non è stato ancora deciso l'impegno finanziario

Animal Health: Partnership co-funded. Dovrebbe partire nel 2023/24. Sono interessati sia il MUR che il MIPAAF e il Ministero Salute. Non è stato ancora deciso l'impegno finanziario

Agriculture of data: Partnership co-funded. Dovrebbe partire nel 2023/24. Sono interessati sia il MUR che il MIPAAF. Italia, Danimarca e Germania stanno lavorando per lo sviluppo di una proposta operativa. Non è stato ancora deciso l'impegno finanziario

Safe and sustainable Food System: Partnership co-funded. Dovrebbe partire nel 2023/24. Sono interessati sia il MUR che il MIPAAF. Non è stato ancora deciso l'impegno finanziario

Alla strutturazione di ogni partnership partecipa uno o più esperti della Delegazione e uno o più co-esperti

HORIZON EUROPE



Partnerships and Missions

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EUROPEAN UNION

EU MISSIONS



Concrete solutions for our greatest challenges

Commission's Communication on European missions (29 September 2021) marks the official launch of the missions:

Adaptation to
Climate Change

Cancer

Climate-neutral
and Smart Cities

Restore our
Ocean and Waters

Soil Deal
for Europe



EUROPEAN UNION

EU
MISSIONS

A Soil Mission to support the Green Deal

Examples of Green Deal Targets related to soil health

By 2030

- 25% of land under organic farming
- Reduce the overall use and risk of chemical pesticides by 50% and the use of more hazardous pesticides by 50%
- Reduce fertilizer use by at least 20%
- Reduce nutrient losses by at least 50%
- Reduce by 30% microplastics released into the environment
- Reduce net greenhouse gas (GHG) emissions by at least 55% compared to 1990 levels.

By 2035

- the EU should aim to reach climate neutrality in the land use, forestry & agriculture sectors.

Mission part of:

- Farm to Fork Strategy
- EU Biodiversity Strategy for 2030
- Climate Adaptation Strategy
- Forest Strategy
- Zero Pollution Action Plan for air, water and soil
- Organic Action Plan
- Long term vision for rural areas
- Communication on carbon farming (upcoming)
- new Soil Strategy (upcoming)

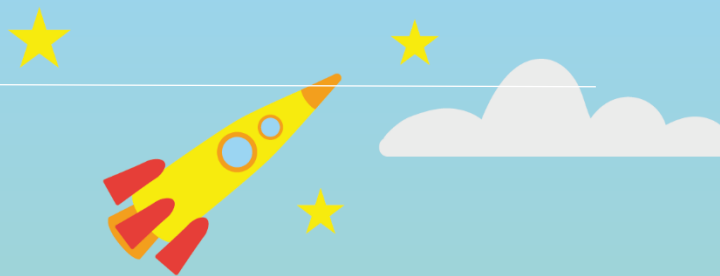


EUROPEAN UNION

EU
MISSIONS

First Work Programmes

- Horizon Europe Mission Work-Programme 2021 (deadline 20 October 2021)
Topic HORIZON-MISS-2021-SOIL-01-01: “Preparing the ground for healthy soils - building capacities for engagement, outreach and knowledge” (budget: 5€ mio). Action to identify regional “soil needs” and monitoring requirements, map existing living labs and lighthouses and help to create a one-stop shop for soil information.
- Update of Horizon Europe Mission Work Programme 2021:
 - 8 topics; budget: 62 €mio
 - 1 procurement for mission platform (3 €m); 1 indirect action with JRC as beneficiary (2 €mio)
 - to be adopted and published end of December 2021
 - deadline for submission of proposals: end of March 2022
- Mission Work Programme 2022
 - Total budget: 95 €mio
 - publication of Work Programme planned for end of April 2022
- Mission Work Programme 2023
 - Total budget: 158 €mio



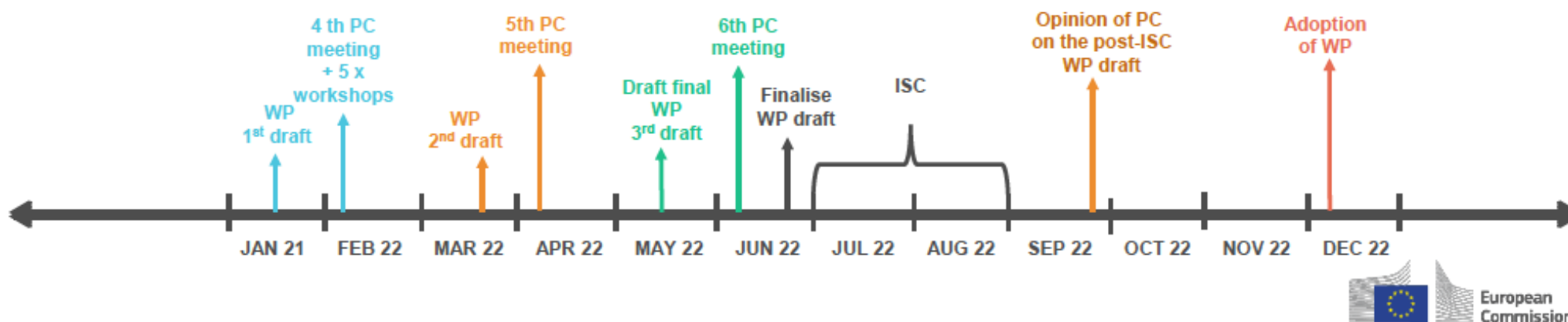
Exchange on Orientations towards the **Work Programme 2023-2024** based on guiding questions



Cluster 6 WP 2023-2024: timeline

Cluster 6 work programme 2023-2024:

- ✓ Preparation of the second WP draft (23 March)
- ✓ PC meeting & workshop on partnerships on 5 April 2022
- ✓ One additional iterations on the third draft WP in June 2022
- ✓ Inter-Service Consultation (ISC) in Summer 2022
- ✓ Adoption by end 2022



Comitato di Programma di Horizon Europe del Cluster 6

DG AGRICULTURE AND RURAL DEVELOPMENT
DG ENVIRONMENT
DG RESEARCH & INNOVATION

Rappresentante Nazionale IT



Gruppo di supporto ristretto

- Rappresentante
- Esperti
- MUR
- APRE



Curriculum vitae et studiorum of Prof. Paola Bonfante
Department of Life Science and Systems Biology
Università di Torino, Viale Mattioli 25 - 10125 Torino, Italy
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Paola has been Full Professor of Plant Biology at the University of Torino from 1985 to 2017, and since 2018 she is Professor Emerita. She has dedicated her scientific activity to the beneficial interactions between fungi, plants and bacteria. As expert in the novel field of the plant microbiota and microbial **biodiversity**, she has published more than 250 papers on peer-reviewed international journals, is among the most cited researchers in the world (Highly Cited Researchers 2017, 2018, 2020) and in the list of top Italian scientists.



Curriculum vitae et studiorum of Prof. Patrizia Brigidi
Department of Medical and Surgical Sciences, Alma Mater Studiorum-Università di Bologna, Via
Massarenti, 9. 40126 Bologna, Italy. E-mail: patrizia.brigidi@unibo.it

Patrizia is Full Professor of “Fermentation Biotechnology” at the University of Bologna since 2008. Her research activity is documented by over 200 papers on peer-reviewed international journals, mainly focused on the characterization of holobiont’s microbiomes, in the perspective of their modulation to promote the host’s health. She has been Member of the Presidency Council of the National Technological Cluster A. **Food** and Chief of the Scientific Committee of this Cluster (2017-2020) and in 2021 she has been re-elected as Member of the Presidency Council of the Cluster A. Food.



Curriculum vitae et studiorum of Prof. Fabio Fava
DICAM, Alma Mater Studiorum-Università di Bologna
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Fabio is Full Professor of “Industrial & Environmental Biotechnology” at the School of Engineering of the University of Bologna since 2005. He published about 180 papers on peer-reviewed international journals in the **bioeconomy** domains. He has been the IT Delegate in the Horizon2020 SC2 (Bioeconomy) Programming Committee and he is IT delegate in other different initiative. Finally, he is the technical/scientific Coordinator of the Italian Bioeconomy strategies and Implementation Action Plan and the Chair of the “National Bioeconomy Coordination Board” at the Presidency of Council of Ministers (Rome).



Curriculum vitae et studiorum of Prof. Danilo Porro
-Institute IBFM – CNR - F.lli Cervi 93, Segrate, Milano
-Università degli Studi di Milano Bicocca, Dipartimento Biotechnologie e Bioscienze, Piazza della Scienza 2, Milano, Italy, E-mail: danilo.porro@ibfm.cnr.it

Danilo is Director of the Institute IBFM – CNR and Full Professor of “Industrial Biotechnology” at the University of Milano Bicocca since 2002, where he has been President of the CCD in Biotechnology, Senator and Pro-rector for Research exploitation. He has been Member of the first Executive Board of the European Federation of Biotechnology. He published about 150 papers on peer-reviewed international journals in the **biorafinery** landscape. The research group has developed, patented and licensed to different international companies different patent families.



Curriculum vitae et studiorum of Prof. Pier Paolo Roggero
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Pier Paolo is full professor of Agronomy and Crop Sciences since 2000, at the Polytechnic University of Marche (2000-2006) and the University of Sassari (from 2006 on). His research expertise includes Mediterranean agro-silvopastoral systems, climate change adaptation and mitigation in **agricultural systems**, water resources management, crop modelling and systems thinking. He is director of the Department of Agricultural Sciences, University of Sassari and he has been director of the Desertification Research Center (NRD), an interdepartmental Centre of the same University for 10 years. He was the President of the Italian Society of Agronomy and Secretary-General of Desertnet-international.



Curriculum vitae et studiorum of Prof. Gianluca Sarà
Laboratory of Ecology at Earth and Marine Sciences Department (DiSTeM, UNIPA)
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Gianluca is Full Professor of Ecology at University of Palermo and leads the Department DiSTeM. With over 165 ISI peer-reviewed articles, he investigates causes and consequences of environmental change including that of anthropogenic climate origin, on marine biodiversity and productivity of **marine natural resources** with emphasis on implications for ecosystem services and sustainability. He is the Rector Delegate for National Strategy Plan Committee 2021-2027 (Bioeconomy, Food and Blue growth and Natural Resources, Environment and Disaster Risk Reduction).

Compiti del Gruppo di supporto allargato

- E' il primo livello di confronto e di discussione per tutta la configurazione
- Fornisce informazioni sui trend di ricerca in Italia
- INPUT: non in forma di keywords, ma estesi e motivati

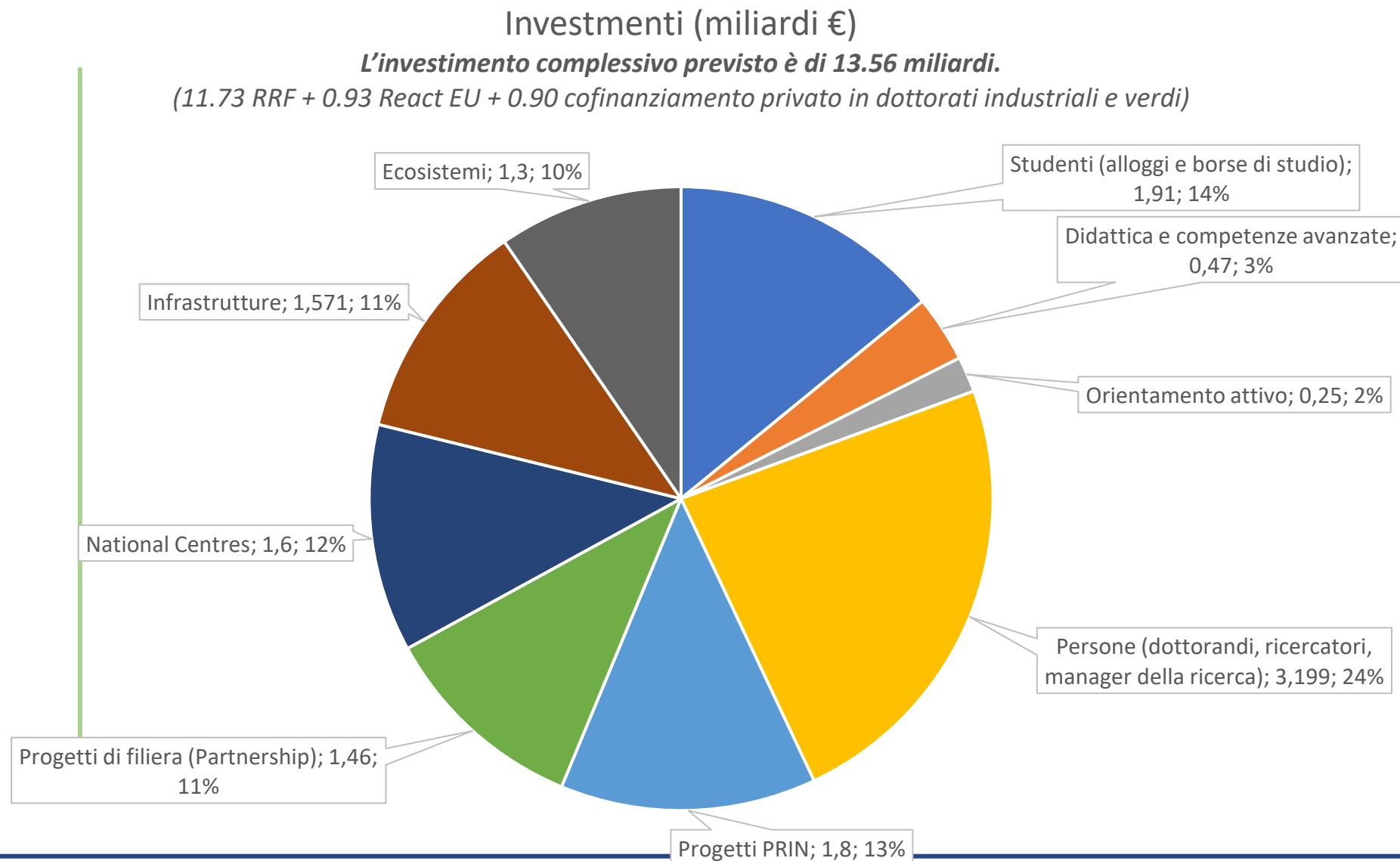
Gli STRUMENTI

PNRR

Il Piano si articola
in 16 Componenti,
raggruppate in
6 Missioni
che recepiscono e
riflettono gli assi
strategici e
prioritari



Destinazione delle risorse: Missione 4 (azioni MUR)





Ministero dell'Università e della Ricerca

Segretariato Generale
Direzione generale della ricerca
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GRAZIE!

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