

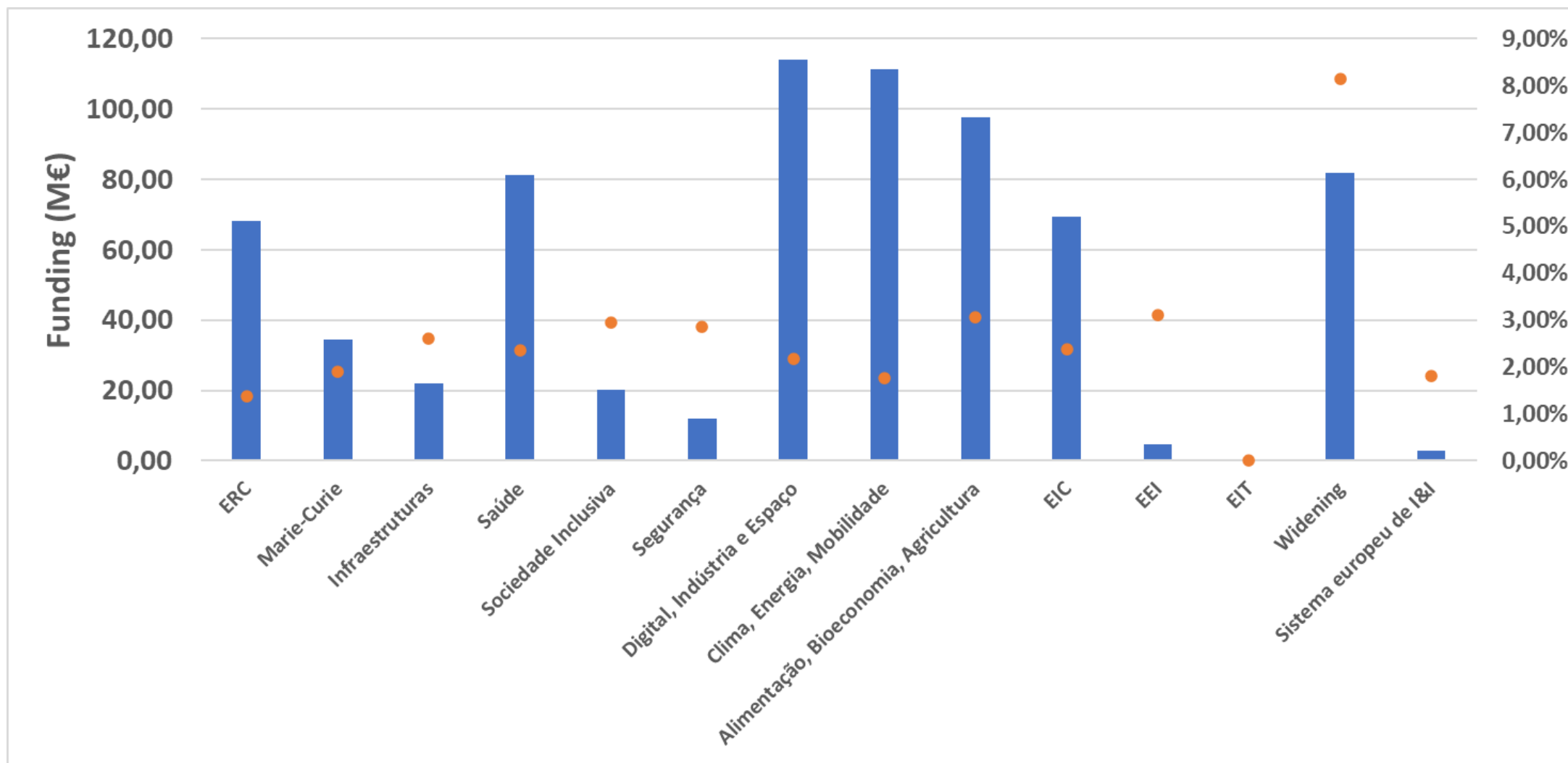
PERIN Portugal in Europe
Research and Innovation Network

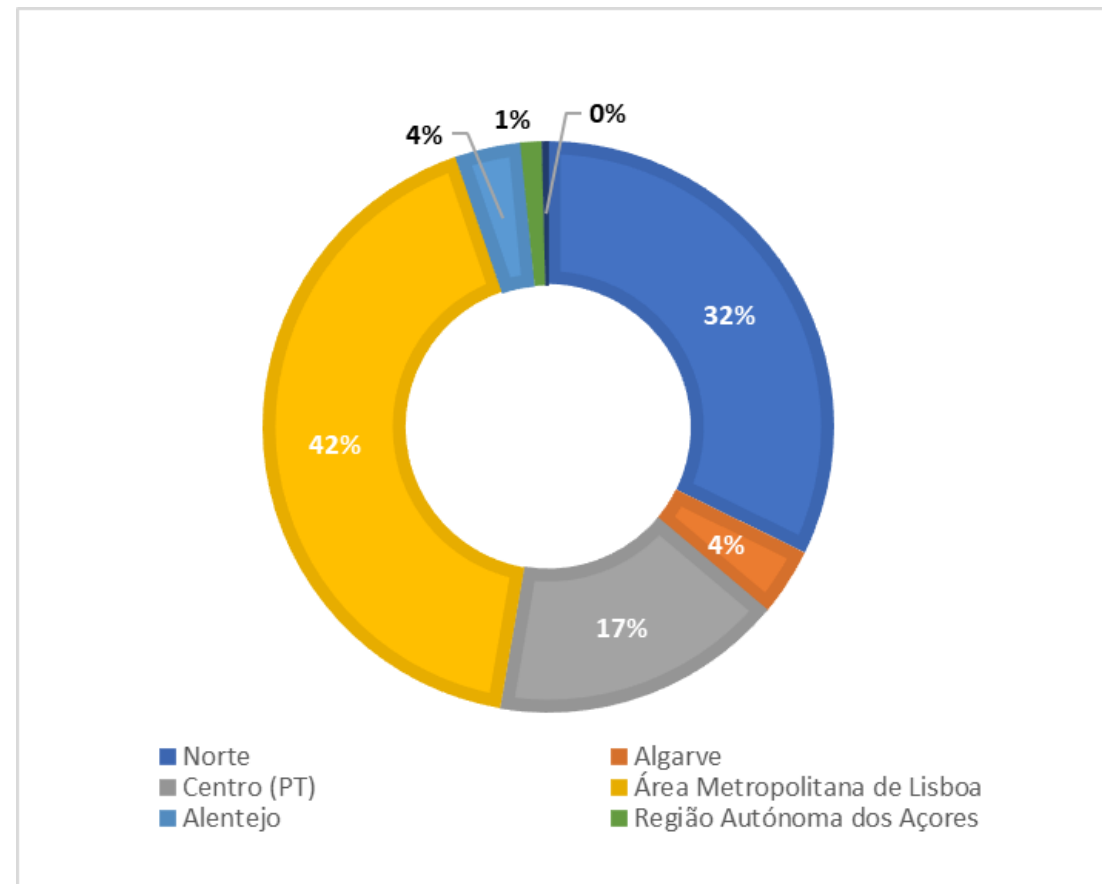
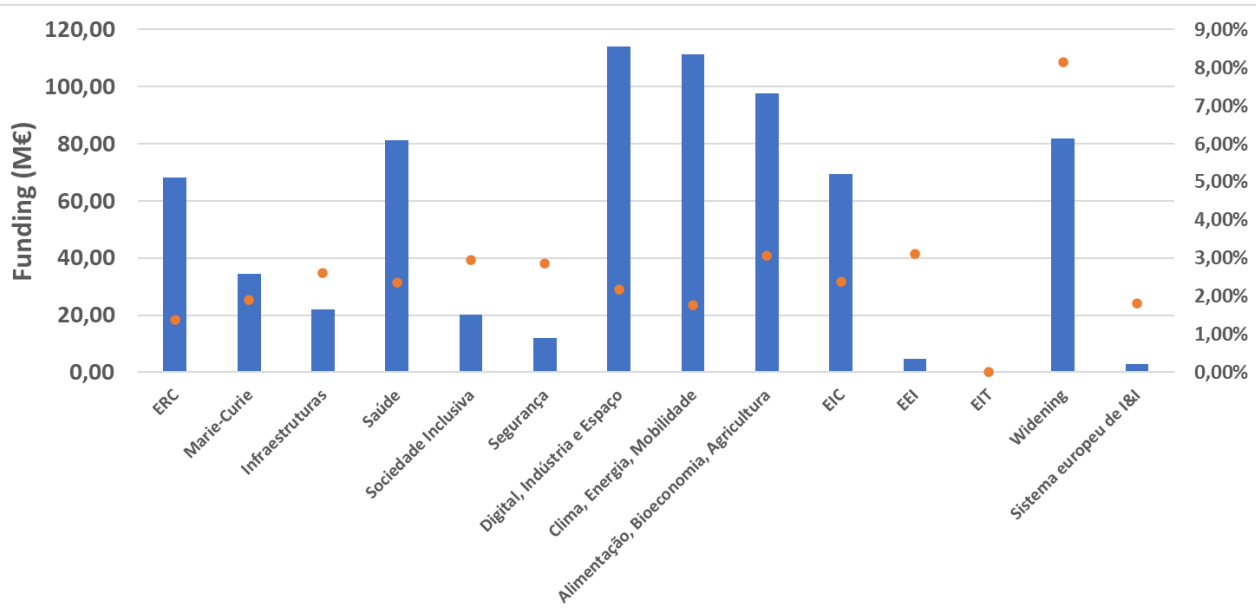
COMPETITIVIDADE, TECNOLOGIA E INOVAÇÃO

Programa Horizonte Europa

ANI: Sofia Azevedo | FCT: Rui Munhá







1247
Projetos

720 M€

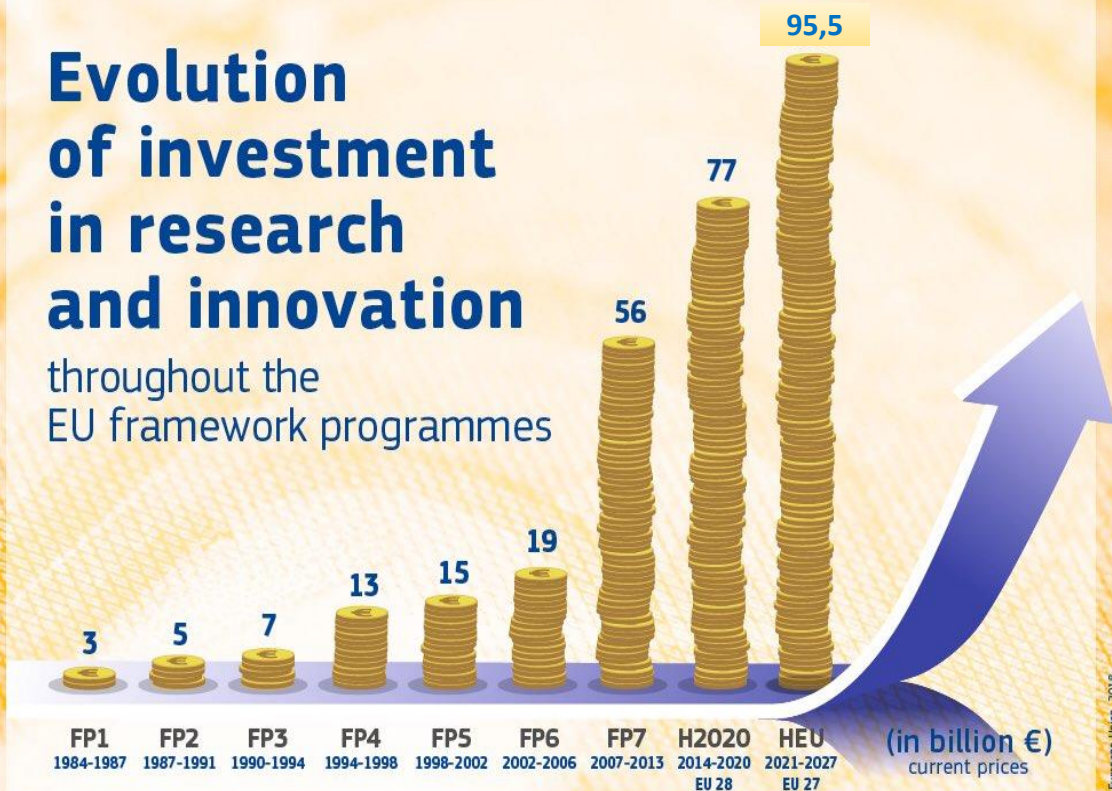
EU-wide collective effort				National regional and local		Financial instrument
Horizon Europe	Digital Europe	Connecting Europe Facilities	Health	Cohesion	Agriculture funds	InvestEU
Research Innovation	Strategic capacities: computing, data, testbeds, etc. Advanced digital skills EU-Wide deployment	Broadband and 5G roll out Connecting Communities	Data Spaces for Health Telemedicine eHDSI	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Making use of Big Data for CAP monitoring Broadband rollout in rural areas	Leverage private capital for investments in SMEs, research, digital, infrastructure, skills...



Horizon Europe

Evolution of investment in research and innovation

throughout the EU framework programmes



© European Union, 2016

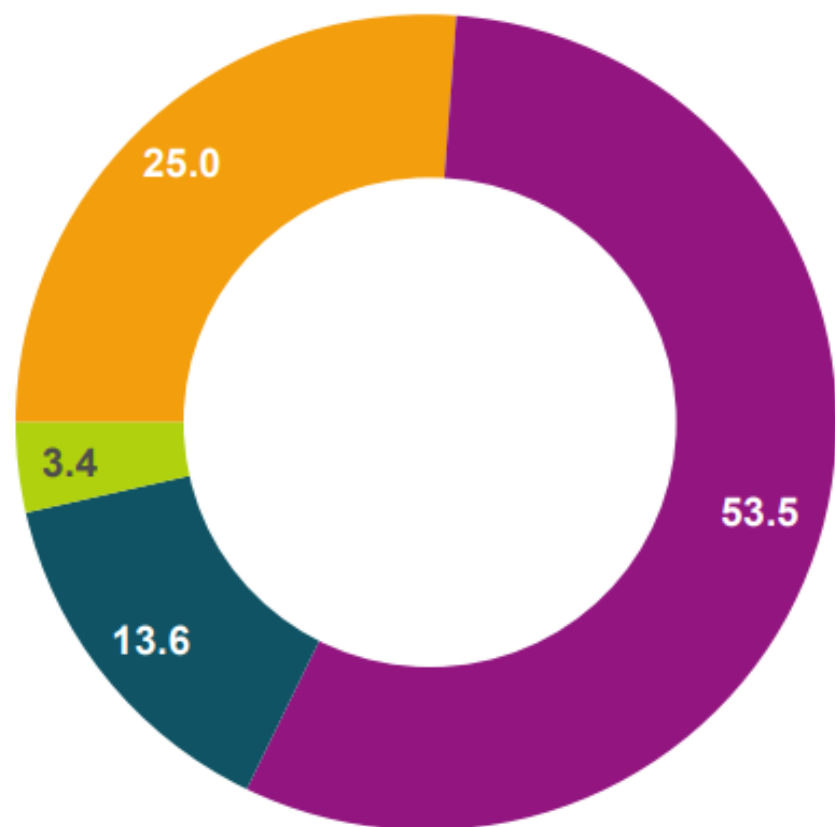
#HorizonEU #InvestEUresearch #EUBudget



European
Commission

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

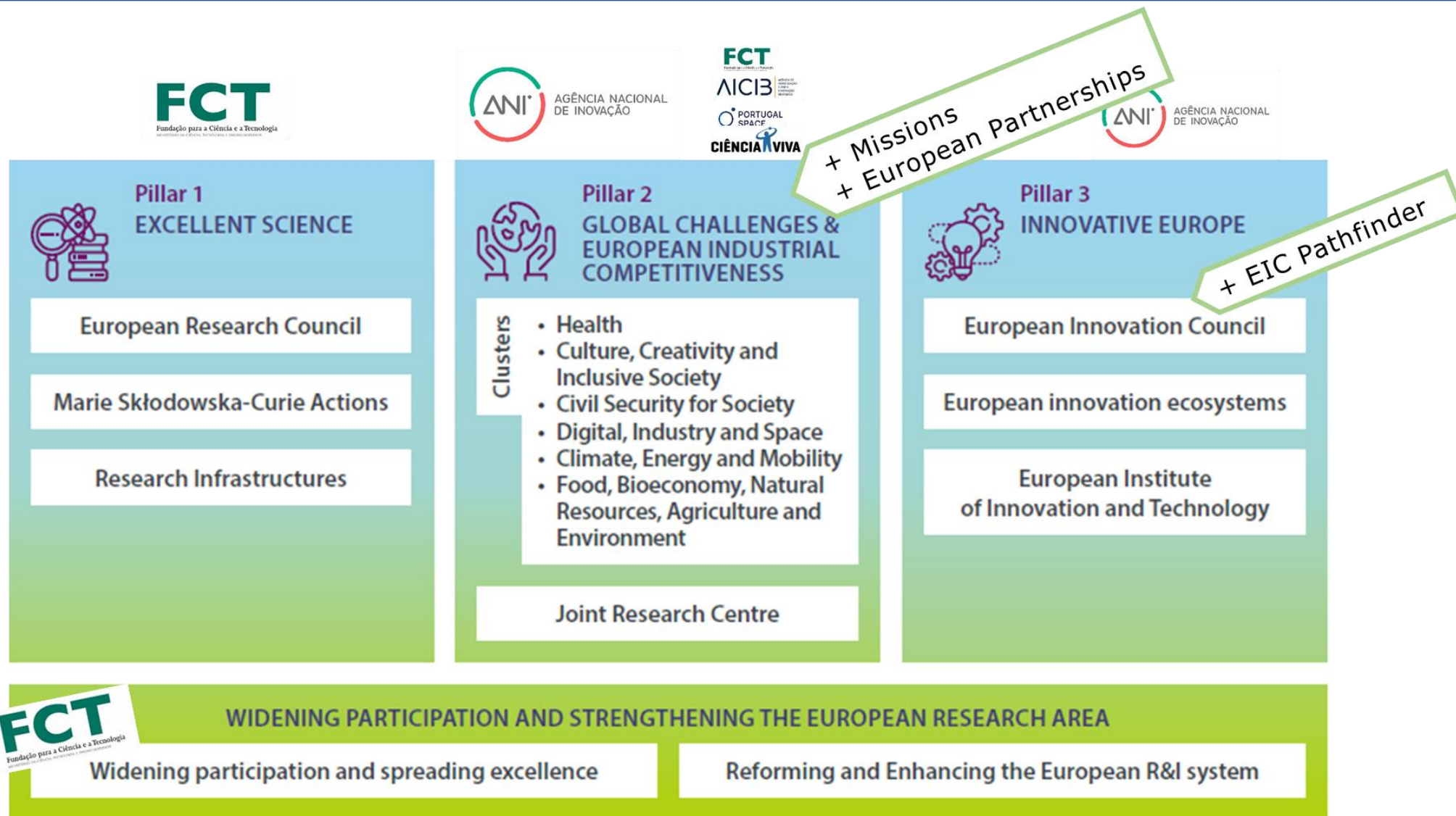
(including €5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)



Political agreement December 2020

€ billion in current prices

- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA



Cluster 1



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

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

Objectives:

- To promote and protect **human health and well-being**,
 - Prevent diseases and decrease the burden of diseases and disabilities on people and communities,
 - Support the transformation of health care systems
 - Foster an innovative, sustainable and globally competitive European health industry
- [HORIZON-JU-IHI-2023-05-02](#): Development and proof of principle of new clinical applications of theranostics solutions (RIA) (16.01.2024)

Cluster 2



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

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

Objectives:

- Improving democratic governance and citizen participation
 - Protection and promotion of cultural heritage
 - Responding to and shaping the diverse social, economic, technological and cultural changes
 - Contribution to the UN Sustainable Development Goals (SDGs)
- [HORIZON-CL2-2024-TRANSFORMATIONS-01-06](#): Beyond the horizon: A human-friendly deployment of artificial intelligence and related technologies (deadline 07.02.2024)

Cluster 3



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

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

Objectives:

- Counter crime and terrorism more effectively while respecting fundamental rights fight
- Improved resilience and autonomy of physical and digital infrastructures
- Increased cyber security and a safer online environment

Topics with deadline 23.11.2023:

- [HORIZON-CL3-2023-CS-01-03](#): Security of robust AI systems
- [HORIZON-CL3-2023-CS-01-01](#): Secure Computing Continuum (IoT, Edge, Cloud, Dataspace)

Cluster 4



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

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

Objectives:

- Speed up and deep digital and industrial transformation of the EU
 - Sustainable supply of raw materials
 - Contribution to the implementation of the new European industrial strategy and of common standards
- [HORIZON-CL4-2024-RESILIENCE-01-24](#): Development of safe and sustainable by design alternatives (IA) (deadline 07.02.2024)
- [HORIZON-CL4-2024-TWIN-TRANSITION-01-03](#):
Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand (RIA) deadline 07.02.2024

Cluster 5



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

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

Objectives:

- Accelerate the green and digital transformation for a climate-neutral Europe by 2050
 - Decarbonization of the energy and transport sectors
 - Strengthening Europe's competitiveness: energy and mobility
- [HORIZON-CL5-2024-D3-01-11](#): AI Testing and Experimentation Facility (TEF) for the energy sector – bringing technology to the market (deadline 16.01.2024)

Cluster 6



Pillar 2
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

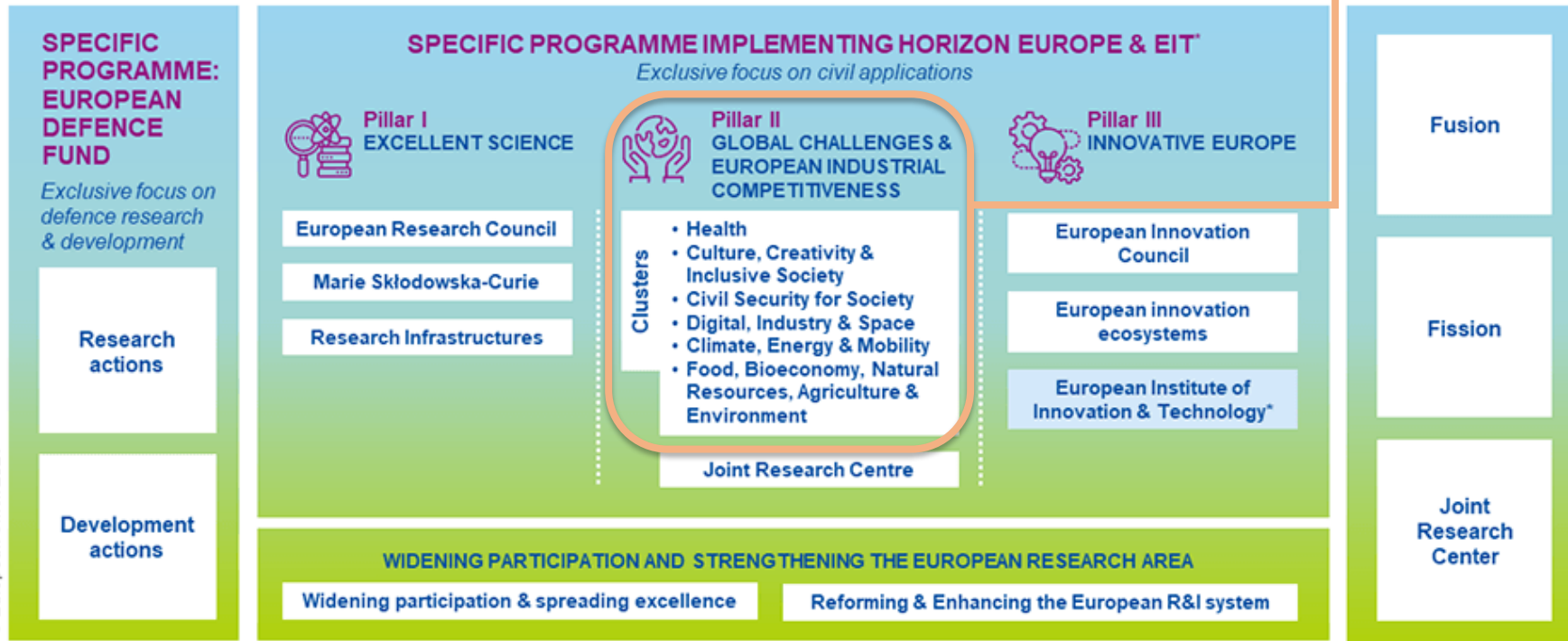
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Objectives:

- to advance knowledge, expand capacities and deliver innovative solutions to accelerate the transition towards the sustainable management of natural resources
 - reversing biodiversity decline;
 - reducing environmental degradation and pollution
- [HORIZON-CL6-2024-GOVERNANCE-01-7](#): Enhancing working conditions and strengthening the work force through digital and data technologies – the potential of robotics and augmented reality in agriculture (28.02.2024)

HORIZON EUROPE

EURATOM



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

Overview of 49 candidate European 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

CLUSTER 1: SAÚDE



ANABELA
ISIDRO



AFONSO
DUARTE



ISABEL
CARVALHO-OLIVEIRA

CLUSTER 2: CULTURA E CRIATIVIDADE



NATÁLIA
DIAS



MARGARIDA
OLIVEIRA

CLUSTER 3: SEGURANÇA CIVIL PARA A SOCIEDADE



ANA
SUTCLIFFE



POLINA
PEREIRA

CLUSTER 4: DIGITAL, ESPAÇO E INDÚSTRIA



16
CRISTIANA
LEANDRO



SOFIA
AZEVEDO



JOÃO NUNO
FERREIRA



DANIEL
FERREIRA



HUGO
COSTA



JOAN
ALABART



MARTA
GONÇALVES

National Contact Points | Pilar II

CLUSTER 5: CLIMA, ENERGIA E MOBILIDADE



CRISTIANA
LEANDRO



MARIA JOÃO
FERNANDES

CLUSTER 6: CLIMA, ENERGIA E MOBILIDADE



ANA
SUTCLIFFE



MARIA JOÃO
FERNANDES



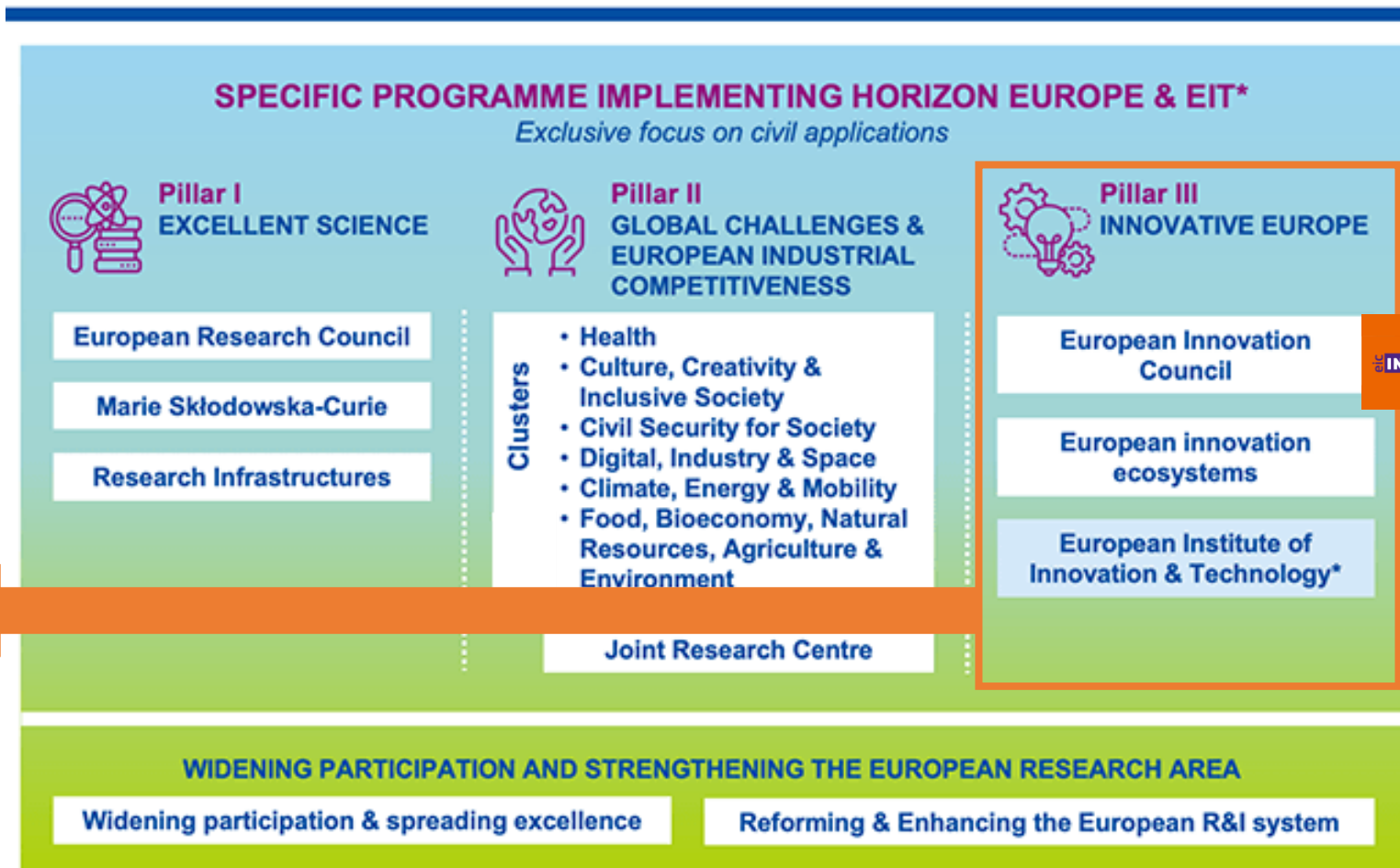
MARGARIDA
SANTOS



RICARDO
CARVALHO

Horizon Europe Structure

HORIZON EUROPE



- Strategic investments in key technologies and emerging sectors
- Attract more private investment in research and innovation
- Innovation for small and medium-sized enterprises (SMEs) to create growth and jobs



eic

FROM IDEA TO MARKET

WHAT



Deep Tech and radical solutions



Advanced science



Potentiate new markets

HOW



Attract investments



Promote entrepreneurship



Support high-risk solutions and IP



Scale innovation and companies



EIC = Unicorn factory

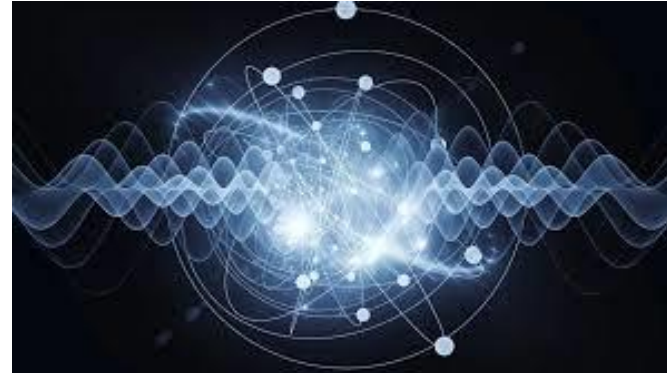
eic FROM IDEA TO MARKET

IS MY IDEA WORTH IT ?

<https://eic.easme-web.eu/#> or [cordis](#)



Machine learning and AI



Quantum Tech & Com



Soil decontamination

Precision nutrition

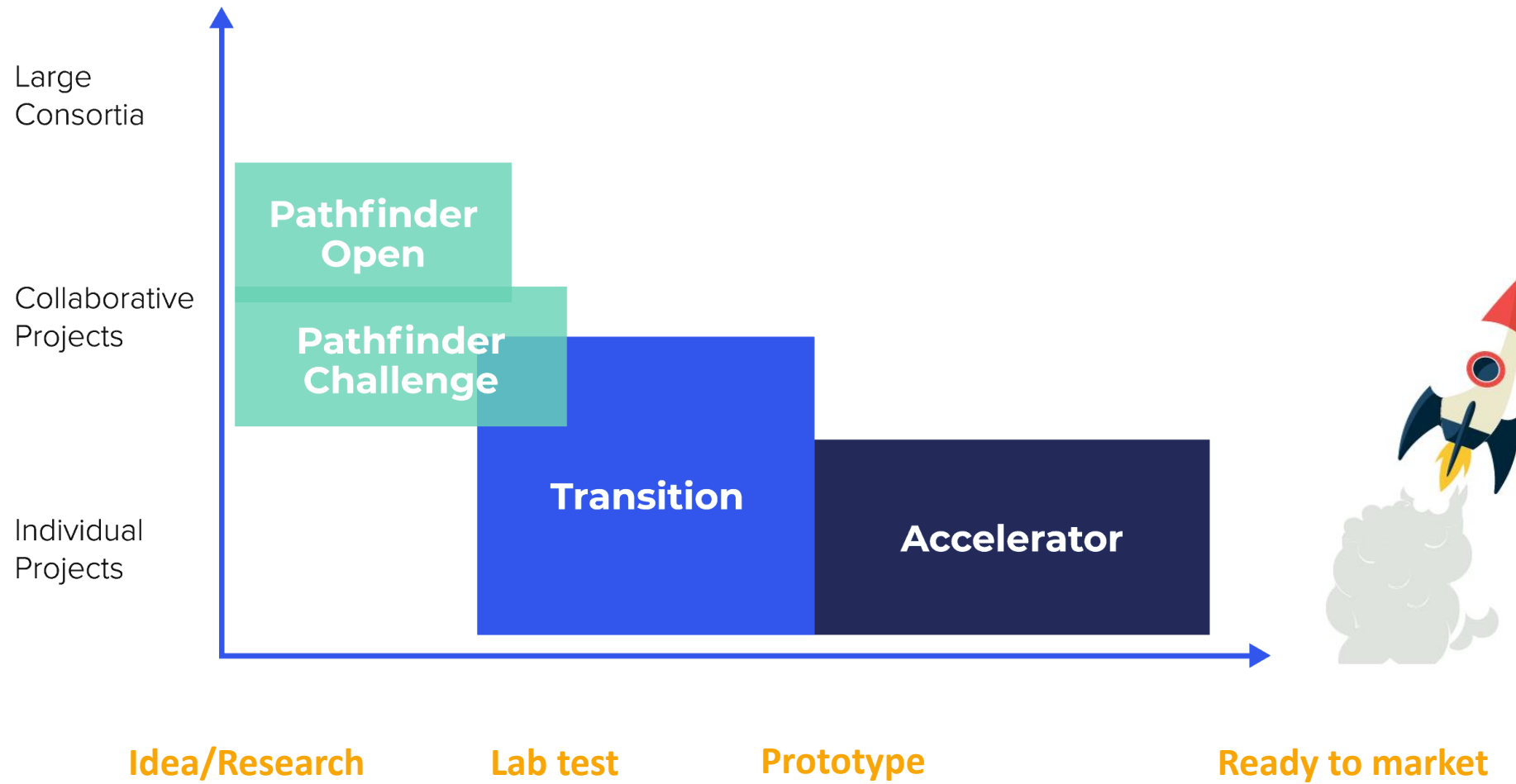


Resilient agriculture



biobased, biodegradable products

EIC Instruments



eic FROM IDEA TO MARKET

EIC INSTRUMENTS



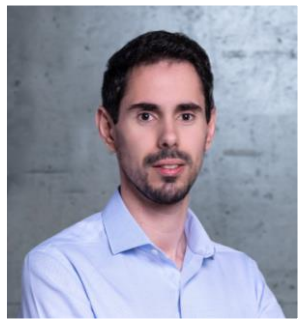
PATHFINDER:
Researchers, technologists

ACCELERATOR:
Start-ups, SMEs and entrepreneurs

TRANSITION



**Alexandre
Marques**



**Ricardo
Carvalho**



**Sofia
Bravo**



**Rita
Silva**



**Bibiana
Dantas**



**Margarida
Santos**



**Cláudia
Azevedo
(Coordenação)**



**Polina
Pereira**

Funding Schemes

INDIVIDUAL INTERESTS & MOTIVATIONS

- *Curiosity-driven research*
- *Scientific employment*
 - *Mobility actions*



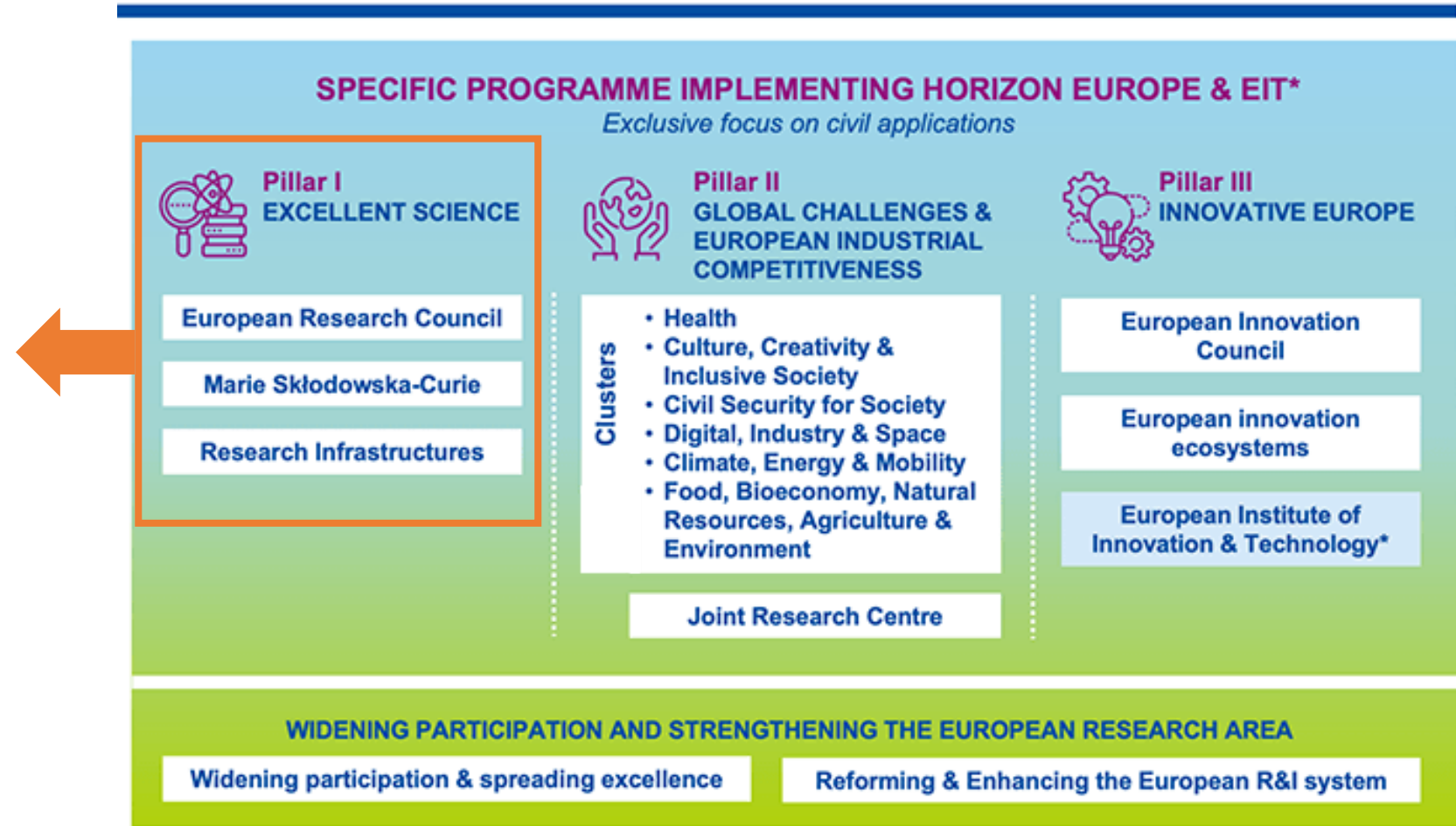
- *Internationalisation strategies*
- *Institutional transformations*
- *Collaborative ecosystems*
- *Win-Win situation*
- *Long-term consortium vision*

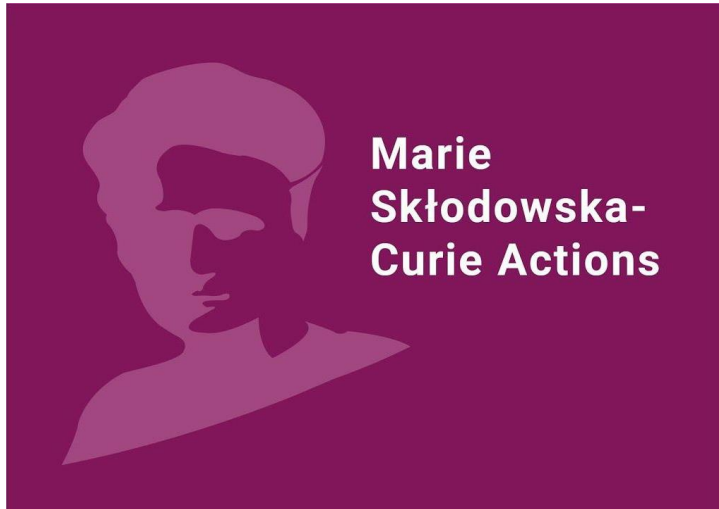
INSTITUTIONAL FRAMEWORK

Horizon Europe Structure

HORIZON EUROPE

- Advanced Training, Scientific Employment, and Mobility Actions;
- Scientific Independence and Frontier Research;
- Access, Sharing and Development of Research Infrastructures;

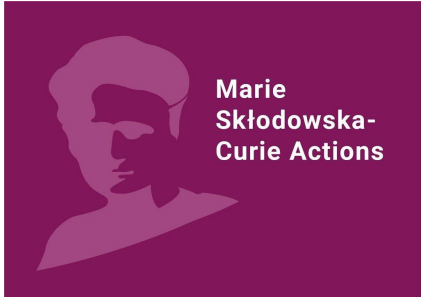




Marie
Skłodowska-
Curie Actions

Training and Mobility Actions

*“The Marie Skłodowska-Curie Actions fund **excellent research and innovation** and **equip researchers** at all stages of their **career** with new **knowledge and skills**, through **mobility across borders** and exposure to different **sectors** and **disciplines**.”*



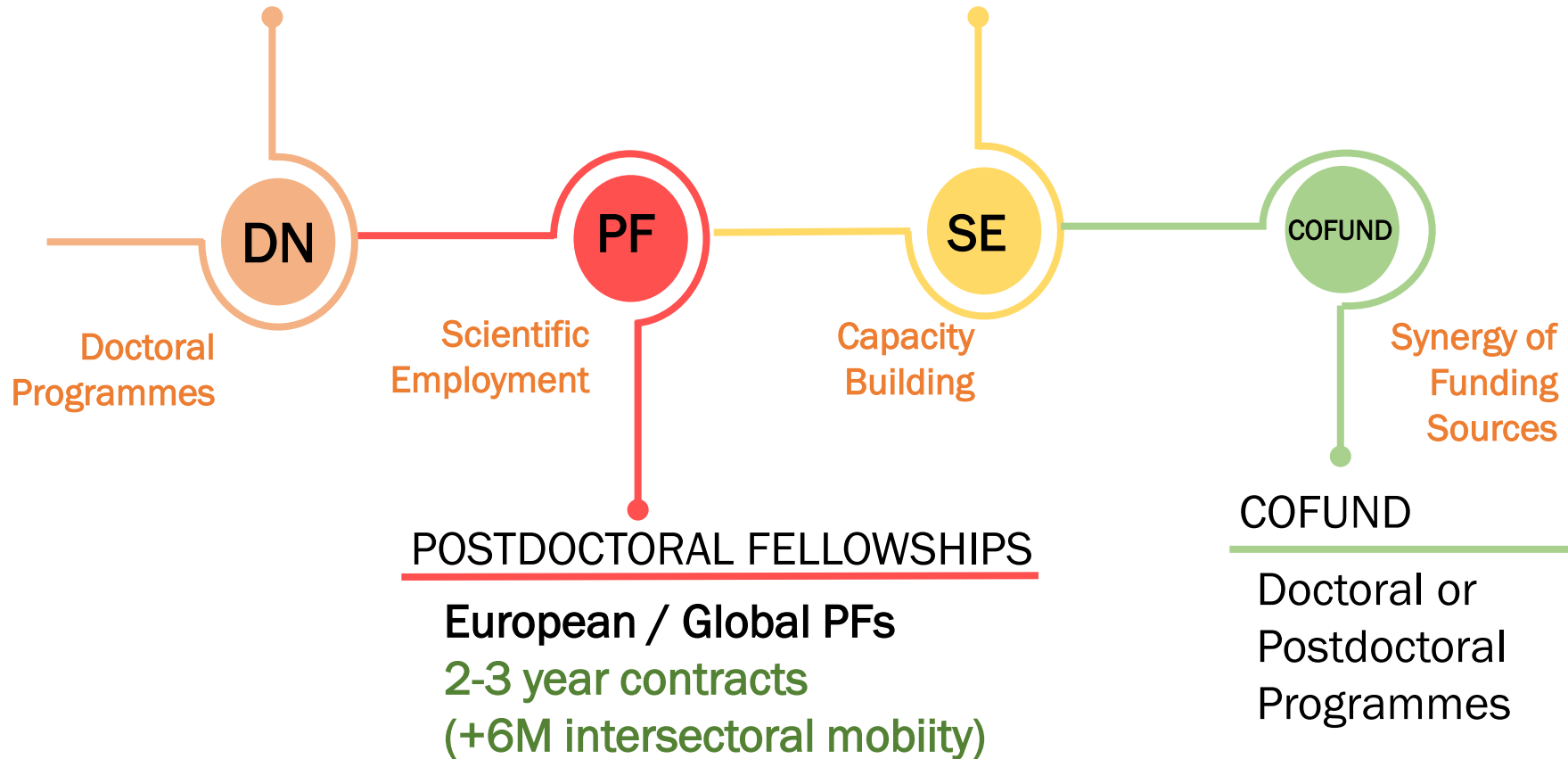
Marie Skłodowska-Curie Actions

Doctoral Networks

Industrial / Joint DNs
Up to 5-year programmes
Variable PhD Fellowships

STAFF EXCHANGE

3 "I" Programmes
Up to 4-year Programmes
Secondments 1-12M



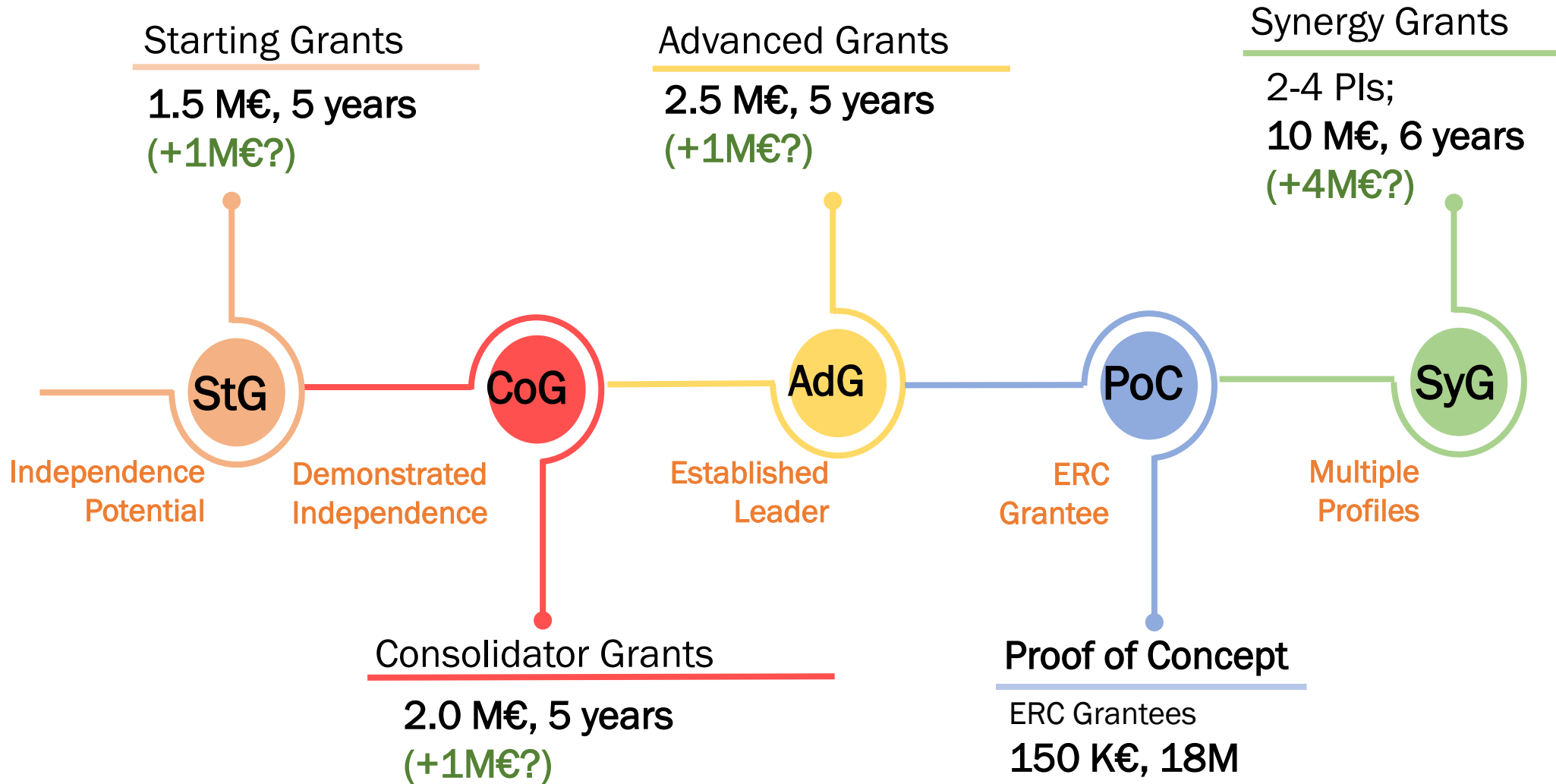


European
Research
Council

Individual Applications Research Projects

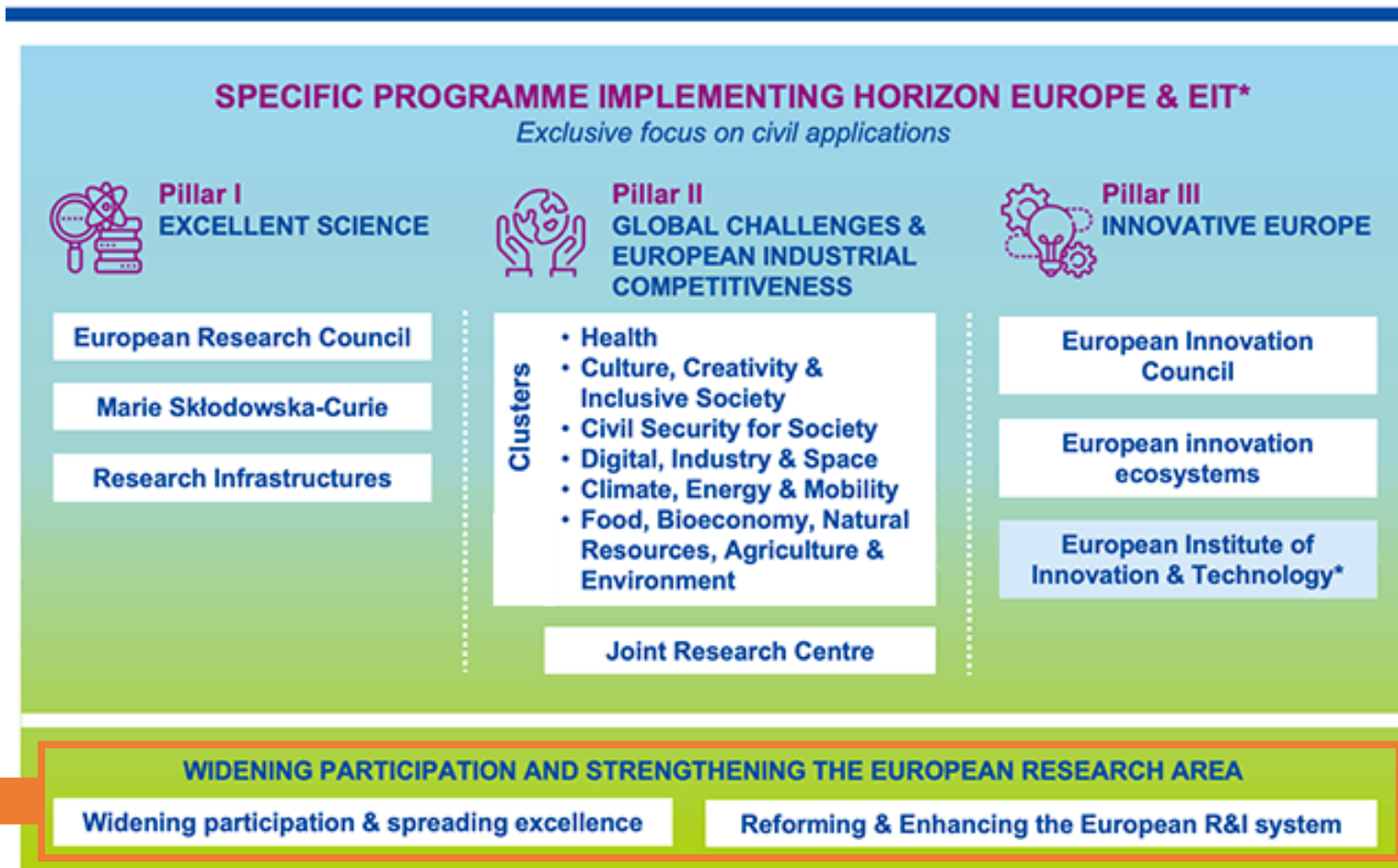
“The ERC's main **frontier research** grants aim to **empower individual researchers** and provide the **best settings** to foster their **creativity**. **Scientific excellence** is the sole criterion of evaluation.”

- Cross boundaries between fields of research
- Unconventional, innovative approaches
- Competitive Principal Investigators
- PI in control



Horizon Europe Structure

HORIZON EUROPE



- Incite reforms and transformation processes
- Mobilise national investments
- Raise the bar for excellence of R&I actors
- Increase number of participations and success rates
- Promote the creation and upscaling of innovation ecosystems
- Foster brain circulation and inter-sectoral mobility



Widening Portfolio of Actions

Institutional development, transformation, policy reforms and national investments

- **Teaming for Excellence**
- **European Excellence Initiative**

Connectivity

- **COST**
- **TWINNING**

Capacity building and Inclusiveness

- **Support to NCPs**
- **HOP ON**

Brain Circulation and Talent attraction

- **ERA-CHAIRs**
- **ERA Talents**
- **ERA Fellowships**

Linking Science and Business for innovation and excellence

- **Excellence Hubs**

Synergies with other policies

- **Pathways to Synergies**



WIDENING

TEAMING

Pathways to Synergies

European Excellence Initiative

Excellence HUBS

ERA-CHAIRS

ERA Fellowships

HOP ON

TWINNING

ERA-Talents



Reforms, Transformations and Synergies

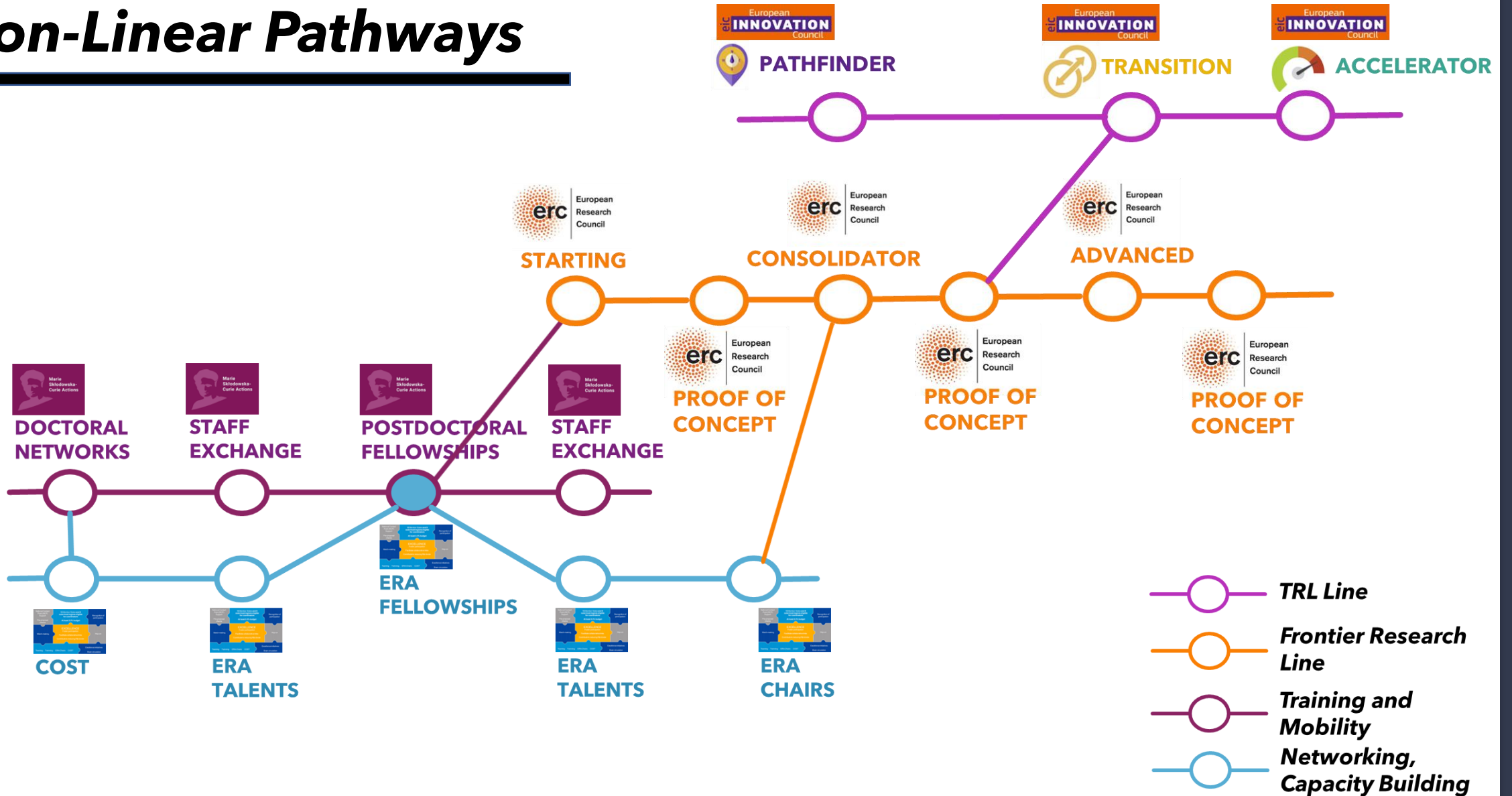
Local/Regional Ecosystems: Linking Sectors

Talent Attraction and Talent Retention: Research Careers

Research and Innovation Activities

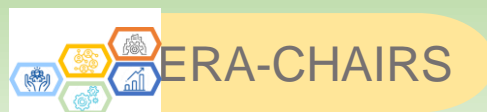
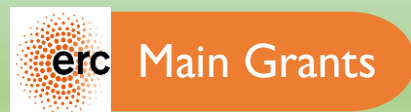
Networking and Capacity Building

Non-Linear Pathways

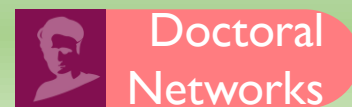
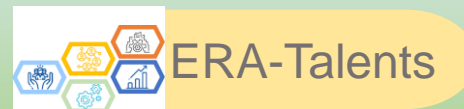
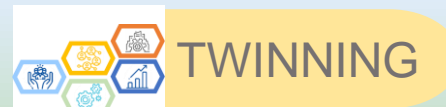


Horizon Europe – Bottom-Up Funding

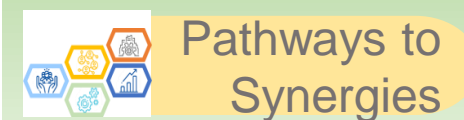
PEOPLE



INSTITUTIONS



ECOSYSTEMS



NETWORKING AND CAPACITY BUILDING



Rui Munhá
ERC & Widening



David Marçal
MSCA
ERC&Widening



Marta Abrantes
Research
Infrastructures



Daniel Carapau
Research
Infrastructures



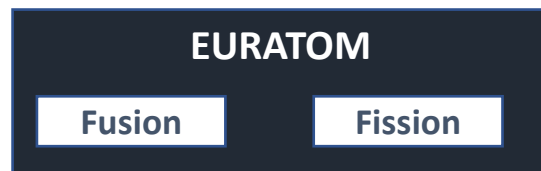
Gonçalo Zagalo
JRC



Rita Cavaleiro
EURATOM



Luísa Igreja
EURATOM





Open discussion