Commission proposal for

Horizon Europe

THE NEXT EU RESEARCH & INNOVATION PROGRAMME (2021 – 2027)

#HorizonEU

DG RTD

28 September 2018
“To speak of the [Europe’s] future, one must speak of Africa – Europe's twin continent. Africa is the future: By 2050, Africa's population will number 2.5 billion. One in four people on earth will be African. We need to invest more in our relationship with the nations of this great and noble continent. And we have to stop seeing this relationship through the sole prism of development aid. Such an approach is beyond inadequate, humiliatingly so. Africa does not need charity, it needs true and fair partnerships. And Europe needs this partnership just as much.”

Jean-Claude Juncker, President of the European Commission
State of the Union -
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
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
- Research Infrastructures

Pillar 2
Global Challenges and Industrial Competitiveness

- Clusters
  - 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
Global Challenges & Industrial Competitiveness: boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals €52.7 billion

<table>
<thead>
<tr>
<th>Clusters</th>
<th>2021-24</th>
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<tbody>
<tr>
<td>implemented through usual calls, missions &amp; partnerships</td>
<td></td>
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<tr>
<td>Health</td>
<td>€7.7</td>
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<tr>
<td>Inclusive and Secure Societies</td>
<td>€2.8</td>
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<tr>
<td>Digital and Industry</td>
<td>€15</td>
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<tr>
<td>Climate, Energy and Mobility</td>
<td>€15</td>
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<tr>
<td>Food and Natural Resources</td>
<td>€10</td>
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<table>
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<tr>
<th>Joint Research Centre</th>
<th>2021-27</th>
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<tr>
<td>supports European policies with independent scientific evidence &amp; technical support throughout the policy cycle</td>
<td>€2.2</td>
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Rationale for EU funded health R&I

Everyone has the right to timely access to affordable healthcare of good quality*

The challenges are complex, interlinked and global

- Newly emerging or persisting health challenges
- Sustainability of social and health care systems
- Competitiveness of EU's health and care industry

The **Health Cluster** builds linkages between:

- Discovery, clinical, epidemiological, environmental and socio-economic research
- Academia – industry – healthcare providers – patients
- Expertise within the EU and beyond

* EU Pillar of Social Rights, UN SDGs
Six main areas of intervention

- Health throughout the Life Course
- Environmental and Social Health Determinants
- Non-communicable and Rare Diseases
- Infectious diseases
- Tools, Technologies and Digital Solutions for Health and Care
- Health Care Systems
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
International Cooperation

Will ensure effective tackling of global societal challenges; access to the world's best talents, expertise and resources; enhanced supply and demand of innovative solutions.

Extended openness to association
- Third countries with good capacity in science, technology and innovation
- Taking into account objective of driving economic growth in Europe through innovation

- General opening for international participation
- Intensified targeted actions (flagship initiatives, joint calls, etc.)
New approach to European Partnerships

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

Key features

- Simple architecture and toolbox
- Coherent life-cycle approach
- Strategic orientation

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 by partners; commitment of partners for financial and in-kind contributions & financial contribution by Horizon Europe

Institutionalised
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe
Thank you!

#HorizonEU

http://ec.europa.eu/horizon-europe
**R&I Missions**

Connecting to citizens: Missions will relate EU’s research and innovation to society and citizens' needs, with strong visibility and impact.

A mission will consist of a portfolio of actions intended to achieve a **bold and inspirational as well as measurable goal** within a set timeframe, with impact for science and technology, society and citizens that goes beyond individual actions.

Horizon Europe proposal defines mission characteristics and criteria.

Specific missions will be **co-designed with Member States, stakeholders and citizens** and programmed within the Global Challenges and Industrial Competitiveness pillar (drawing on inputs from other pillars).
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https://www.facebook.com/EUScienceInnov/
https://www.facebook.com/cmoedas/

Horizon Europe dedicated website
http://ec.europa.eu/horizon-europe

European Innovation Council
http://ec.europa.eu/research/eic

EU budget for the future
http://ec.europa.eu/budget/mff/index_en.cfm
#1 Health throughout the Life Course

People in vulnerable stages of life have specific health needs, that require better understanding and tailored solutions.

- Early development and the aging process
- Maternal and child health
- Health needs of adolescents
- People with disabilities and injuries
- Active life for the elderly
- Health education and digital health literacy
#2 Environmental and Social Health Determinants

We need to better understand how the social, economic and physical environment impacts our health and mitigate health risks and threats.

- Health hazards of chemicals, pollutants and environmental stressors
- Capacity and infrastructure to collect, share and combine exposure data with health and diseases
- Environmental, occupational, social and behavioural factors impacting physical and mental health
- Risk assessment, management and communication
- Health promotion and prevention
Non-communicable diseases remain a major health and societal challenge requiring personalized approaches.

- Earlier and more accurate diagnoses
- Prevention and screening programmes
- Treatments and cures
- Palliative care
- Comparative effectiveness of interventions
- Scale up of health interventions
#4 Infectious Diseases

We must protect people in the world from the threats of infectious diseases and AMR.

- Drivers for the emergence and re-emergence of infectious diseases and their spread
- Prediction, early detection and surveillance of infectious diseases and AMR pathogens
- Vaccines, diagnostics, treatments and cures
- Emergency preparedness, response and recovery measures
- Uptake of medical interventions in clinical practice, health systems
- Specific challenges in low- and middle-income countries (LMICs)
#5 Tools, Technologies and Digital Solutions for Health and Care

New technologies are vital for public health and the competitiveness of European Health related industries.

- Tools and technologies for medical indications
- Integrated solutions for health incl. mobile and telehealth
- Piloting and large-scale deployment of healthcare technologies and tools in real-life settings
- Innovative processes for development, manufacturing and rapid delivery
- Safety, efficacy, quality and ethical and social impact
- Regulatory science
#6 Health Care Systems

Health systems are a key asset of the EU social system. We shall keep them accessible, resilient and sustainable and harness the potential of data-driven and digital innovation.

- Reforms in public health systems and policies
- New models for health and care and future workforce
- Improving health technology assessment
- Use of health data respecting security, privacy and interoperability
- Health systems resilience – crises and disruptive innovation
- Patient empowerment, self-monitoring, user-centered integrated care
# Pillar 1

**OPEN SCIENCE:**

reinforcing and extending the excellence of the Union's science base

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<td>▪ Frontier research by the best researchers and their teams</td>
<td>▪ Equipping researches with new knowledge and skills through mobility and training</td>
<td>• Integrated and inter-connected world-class research infrastructures</td>
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€ 16.6 billion

€ 6.8 billion

€ 2.4 billion
Pillar 3

OPEN INNOVATION:
stimulating market-creating breakthroughs and ecosystems conducive to innovation

European Innovation Council
- Support to innovations with breakthrough and market creating potential

European innovation ecosystems
- Connecting with regional and national innovation actors

European Institute of Innovation and Technology (EIT)
- Bringing key actors (research, education and business) together around a common goal for nurturing innovation

€ 10.5 billion, incl. up to € 500 million for ecosystems

€ 3 billion
Open Science across the programme

- Encouraging uptake of Open Science practices through earmarked funding, including to enhance researcher skills in Open Science and support reward systems that promote it.

- **FAIR (findable, accessible, interoperable, re-usable) and Open Data:** research data is open by default (with opt-out possibilities) and a data management plan is obligatory.

- **Open Access** to publications: no reimbursement of article processing charge (APC) for publications in hybrid journals.

- **Monitoring system** to ensure compliance with Horizon Europe provisions.
Strategic planning to define multiannual work programmes and calls for proposals

- Transparency and stakeholder involvement
- Prioritisation and flexibility to align to political priorities
- Internal programme coherence & synergies with other programmes

**Multiannual Strategic R&I Plan**
- Multiannual orientations and priorities in one document
- Areas for partnerships and missions

- Strategic discussions with Member States and European Parliament
- Consultation with stakeholders

Work Programmes