

EU Fisheries (and aquaculture) Research and Innovation

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DG Research and Innovation

Who are we?

The **Marine resources** Unit within the **Directorate Bioeconomy** (F)

Defines and implements fisheries research and innovation objectives and priorities to support the Integrated Maritime Policy and in particular the Common Fisheries Policy.



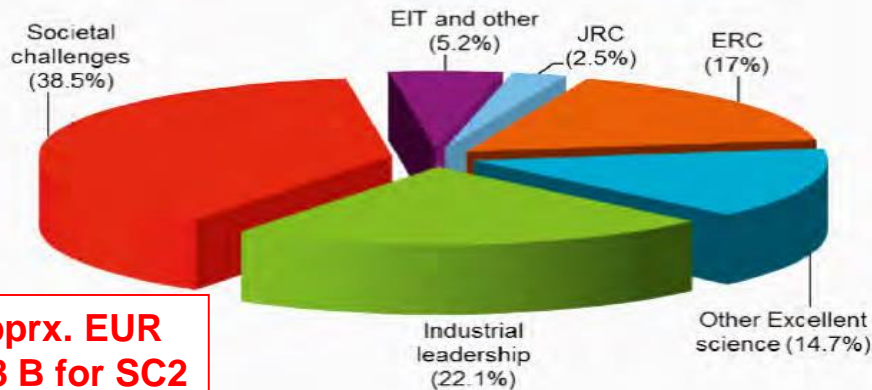
EU Research and Innovation is funded through multiannual Framework Programmes.

Horizon 2020 (from 2014 to 2020)

Horizon Europe (from 2021 to 2027)



H2020 budget > € 70 Billion



**Apprx. EUR
3,8 B for SC2**

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, resource efficiency and raw materials
6. Inclusive, innovative and reflective societies
7. Secure societies



EU-funded fisheries and aquaculture research WHY?

85-90% of marine research funding in Europe comes from national budgets

- Common objectives, such as MSY and GES
- Equally ambitious policy support and implementation in all Member States
- Sharing of know-how and best practices and adjustment of national approaches can be best achieved by multinational research consortia
- Pre-commercial research with high innovation potential involves high failure risk, requires co-operation of diverse research teams and investment at levels and time-scales that national funding cannot always commensurate with
- Need to deliver the results to the whole EU economy

Supporting the elimination of discards in European Fisheries

- Avoidance of unwanted catches
- Handling of unavoidable unwanted catches
- Study of effects on marine ecosystems



Relevant EU research and innovation funded projects



Strategies for the gradual elimination of discards in European fisheries

<http://www.discardless.eu/>

<http://www.discardless.eu/video/entry/discardless-introduction>

<https://vimeo.com/257888698> (1-3:40)



MINOUW

Creating a positive change in the sea

Science, Technology, and Society Initiative to minimize Unwanted Catches in European Fisheries

<http://minouw-project.eu/>

<https://vimeo.com/251163587?from=outro-embed>

https://www.youtube.com/watch?v=lnew_d9b00I

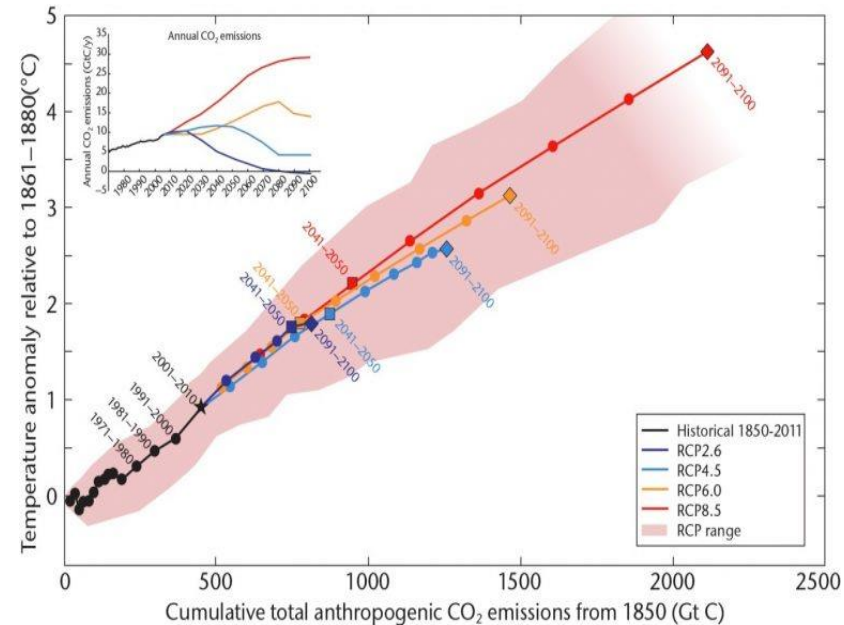
Effects of climate change: threats and opportunities



Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change

<http://climefish.eu/>

https://youtu.be/fkLYL6a_JRc (1-2:35)



Climate change and European aquatic
REsources

<https://ceresproject.eu/>

<https://vimeo.com/231060663>

<https://vimeo.com/217654236>

Responsive Results-Based Management and capacity building for EU Sustainable Fisheries Partnership Agreement- and international waters

<https://www.farfish.eu/>



79%

of EU catches are
taken in EU waters

8%

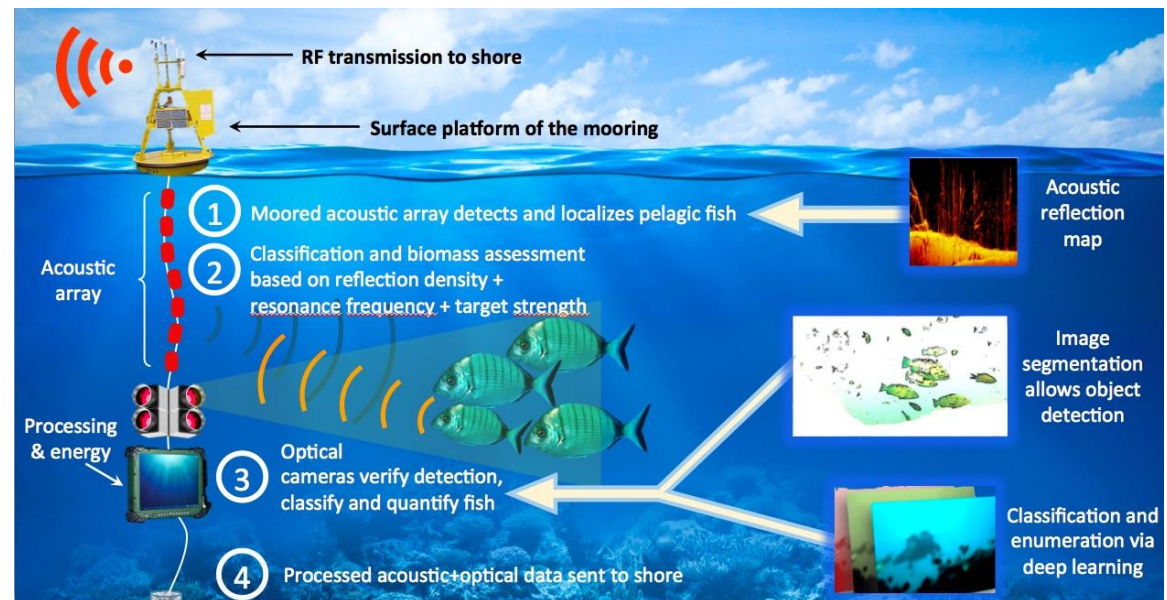
of EU catches are made in
countries' waters outside the EU

13%

are taken on
the high seas

New technologies in fisheries

Machine vision
Camera technology
Data processing
Machine learning
Artificial intelligence
Big data analysis
Smartphones/Tablet
LED light technology
Acoustic technology
ROV technology



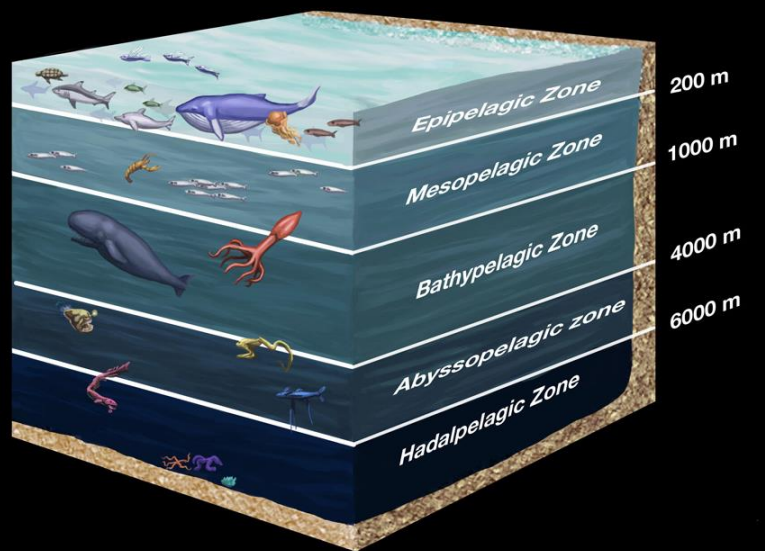
SYMBIOSIS A Holistic Opto-Acoustic System for Monitoring Marine Biodiversities

SmartFish: Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector

LC-BG-03-2018: Sustainable harvesting of marine biological resources

- Provide **data, information** and **knowledge** on the potential **role** of **mesopelagic** micro- and macro-**organisms**
- Address **food safety, fisheries management, fishing techniques, processing** and **consumer acceptance** and **marketing**
- Assess **impacts** of **fishing** and **climate change**
- Assess the **potential** of mesopelagic resources for marine **biotechnological applications**.
- Develop an **ecosystem-based approach to exploitation**.

Zones of the Ocean



Commission proposal for Horizon Europe

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

#HorizonEU

Nikos Zampoukas – EC DG RTD Marine Resources



Horizon Europe

is the Commission proposal for a **€ 100 billion** research and innovation funding programme for seven years (2021-2027)



to strengthen the EU's scientific and technological bases



to boost Europe's innovation capacity, competitiveness and jobs



to deliver on citizens' priorities and sustain our socio-economic model and values

Additional **€ 4.1 billion** are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund

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

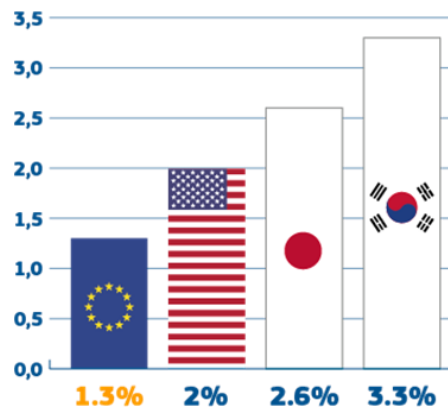


Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

While benefiting from world-class research and strong industries...

Our knowledge and skills are our main resources.

- **7%** of the world's population
- **20%** of global R&D
- **1/3** of all high-quality scientific publications

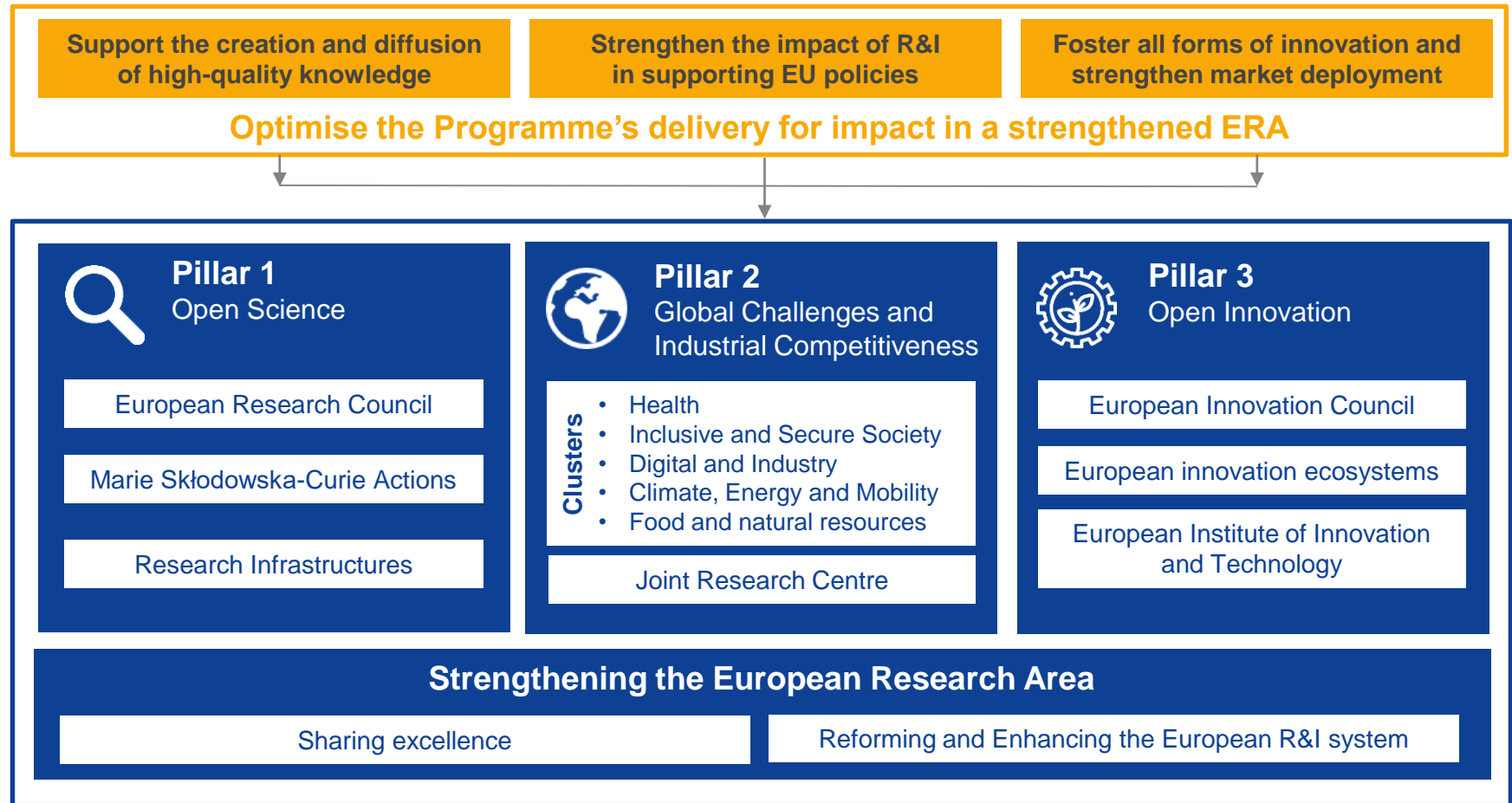


1.3%
EU business
R&D
investment

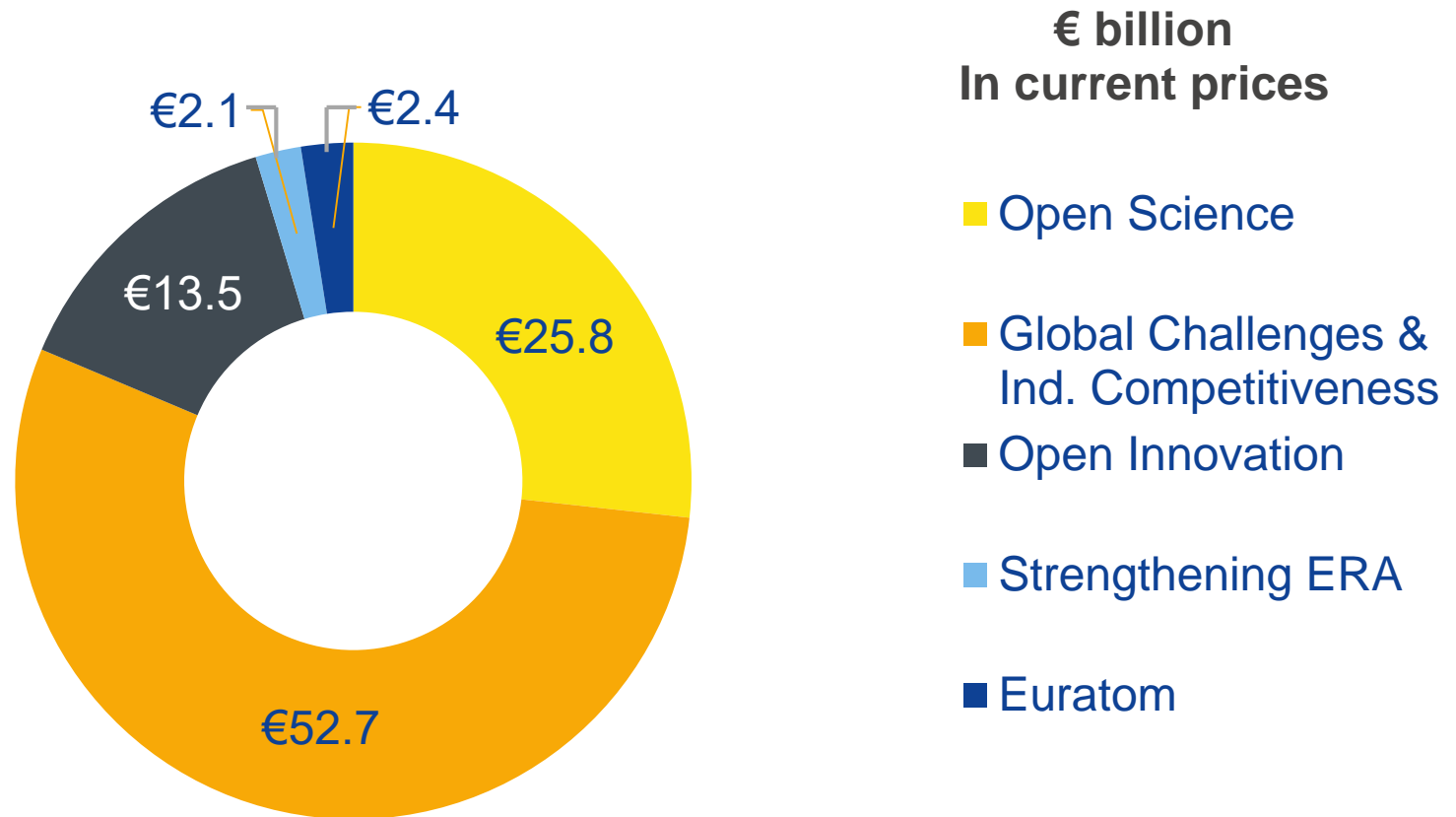
...Europe fails to transform leadership in science into leadership in innovation and entrepreneurship

Horizon Europe: evolution not revolution

Specific objectives of the Programme



Budget: €100 billion* (2021-2027)



* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

Pillar 1

OPEN SCIENCE:

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

European Research Council

- Frontier research by the best researchers and their teams

€ 16.6 billion

Marie Skłodowska-Curie Actions

- Equipping researches with new knowledge and skills through mobility and training

€ 6.8 billion

Research Infrastructures

- Integrated and inter-connected world-class research infrastructures

€ 2.4 billion

Pillar 2

Global Challenges & Industrial Competitiveness:

boosting key technologies and solutions underpinning
EU policies & Sustainable Development Goals

Clusters implemented through usual calls, missions & partnerships	Budget (€ billion)
Health	€ 7.7
Inclusive and Secure Society	€ 2.8
Digital and Industry	€ 15
Climate, Energy and Mobility	€ 15
Food and Natural Resources	€ 10
Joint Research Centre supports European policies with independent scientific evidence & technical support throughout the policy cycle	€ 2.2

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

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

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

€ 3 billion

Next steps





R&I Missions: what?

Art. 2 of the FP/RfP Regulation: *Definitions*

A portfolio of actions 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.

Missions are programmed within Pillar 2 but may benefit from actions carried out within other parts of the programme



R&I Missions: criteria

Art. 7 of the FP/RfP Regulation: *Missions*

- have a clear **EU-added value** and contribute to reaching Union priorities
- **be bold** and inspirational, and hence have wide societal or economic relevance
- indicate a **clear direction** and be targeted, measurable and time-bound
- be centered on ambitious but realistic **research and innovation** activities
- spark activity **across disciplines** (incl. SSH), sectors and actors
- be open to **multiple, bottom-up solutions**



R&I Missions: how?

Art. 6(7) of the FP/RfP Regulation: *Implementation and forms of funding*

Art. 11 of the SP Decision: *Work Programme*

Annex I to the SP Decision: *Strategic Planning*

Impact assessment annex 8-2

- **Mission areas** will be identified in the draft Strategic Plan for consultation with Member States and stakeholders
- Specific missions will be **co-designed** with Member States, the Parliament, stakeholders, end-users and citizens
- Missions will be implemented through dedicated **calls for proposals** in the Work Programmes
- Calls will be **non-prescriptive** and open to new solutions and newcomers



R&I Missions: how?

Art. 26 of the FP/RfP Regulation: ***Evaluation***

Art. 5 of the SP Decision: ***Missions***

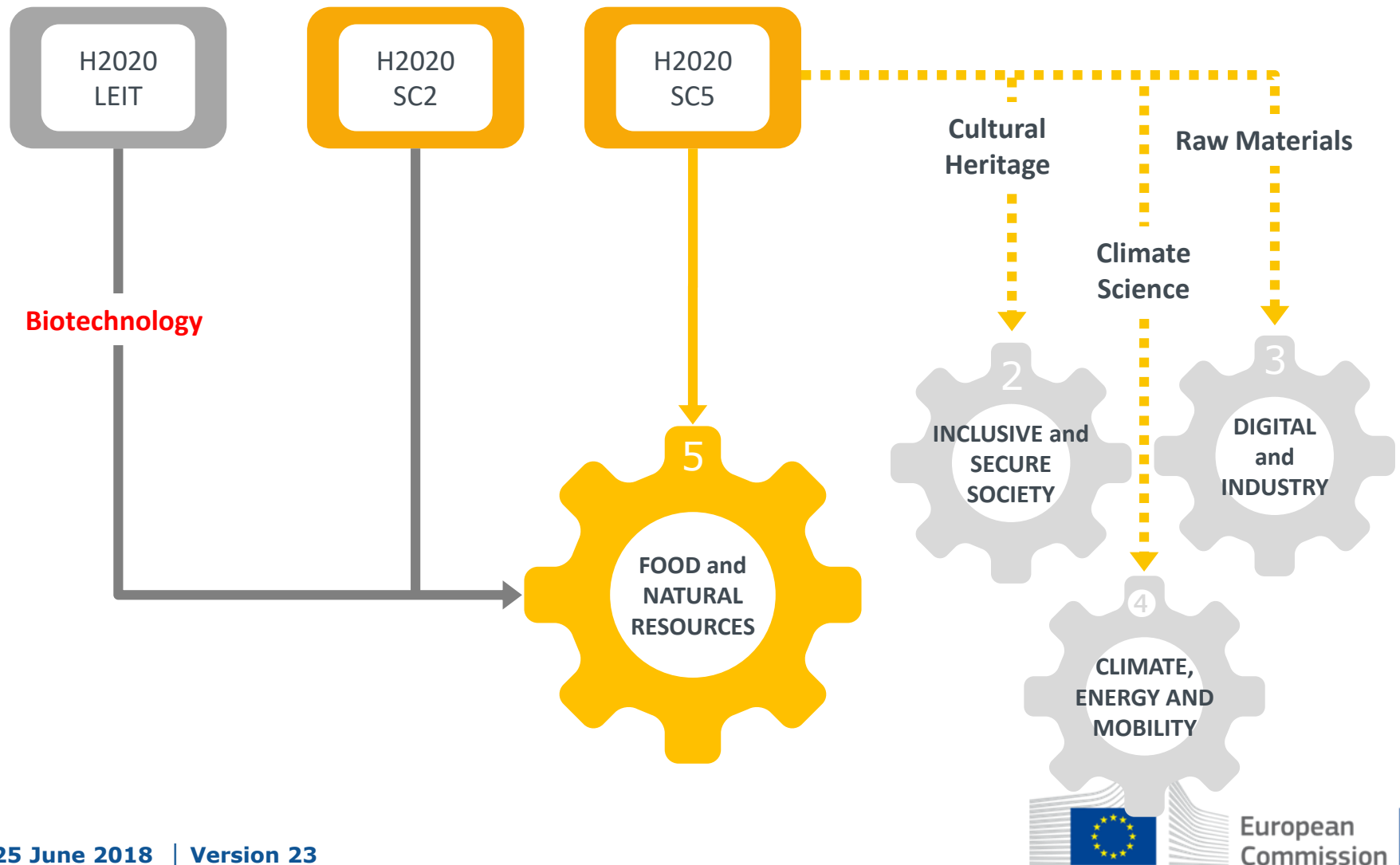
Impact assessment annex 8-2

- A **mission board** may be established for each mission: around 15 members including end-users
- Mission Boards have an **advisory role** in designing the mission and its implementation
- Missions will be implemented through a coherent **portfolio** of projects
- Missions will be implemented **through existing executive agencies** according to the content of the mission

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



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

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.



Thank you

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<http://ec.europa.eu/horizon-europe>