EU level initiatives and policies concerning digitalisation in the agricultural value chain.

Conference „Digital Transformation of the Agricultural Value Chain – Opportunities, Challenges and the Role of Science"

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DG AGRI

Unit B2: Research & Innovation

2 December 2020

Broader political context framing sustainable digitalisation in agriculture

Digital Age

Common Agricultural Policy

Green Deal

Farm to Fork Strategy

Objectives of the Common Agricultural Policy post-2020

Cross-cutting / horizontal objective:

Modernising the sector by fostering and sharing of knowledge, innovation and **digitalisation** in agriculture and rural areas, and encouraging their uptake

Digital technologies can …

- help farmers to work more precisely and efficiently;

- increase the sector's sustainability performance and competitiveness;

- make the job of a farmer more attractive to younger generations;

- increase transparency for the consumer;

- support all types of farming;

- reduce administrative burden for farmers and administration.

- But "gap" between R&I and market and the uptake of digital technologies   by farmers.

Digitalisation as « enabler »

- *Digitalisation is one key to achieve environmental and socio-economic sustainability ambitions.*

- *But potential not fully exploited due to e.g. shortcomings in:*

  - *Infrastructure (e.g. broadband)*

  - *Awareness of digital technologies and skills*

  - *Cost-effectiveness of some technologies*

  - *Trust of operators in technology*

Exploiting the potential of digital technologies – A European perspective

- Strengthening broadband capacities

- Supporting the development of digital skills

- Enabling the exchange of information and experiences

- Providing advisory services

- Facilitating investments

- Providing data and facilitating data sharing

- Promoting targeted Research & Innovation

What are we already doing with EU programmes?

Selected examples

- Research and Innovation/ Horizon 2020

- CAP – **EIP - AGRI**

Horizon 2020 - Large Scale Pilots
in Agriculture

Very Large Innovation Actions, 30-60 Partners

Supply-demand cooperation

Focus on Open platforms and Standards based solutions

Value-chain approach

A set of compelling use cases with evidence of Impact

Cascading Funding

IoF
30M€ funding

demeter
15M€ funding

Atlas
13M€ funding

8

Use Case –Crop managment

4.3 ADDED VALUE WEEDING DATA

5/8

CURRENT TRL & TARGET TRL

+ 5%

PRODUCTION CROP/M^2

+ 10%

€/CROP

- 10%

LABOUR REDUCTION

HOW IT WORKS

- WEEDING MACHINE
- IMAGE PROCESSING
- CROP SIZE
- CROP HEALTH
- WEED PRESSURE
- MOISTURE SENSOR
- YIELD MONITORING
- WEED, CROP AND SETTINGS DATA
- FARMER USING DATA
- OTHER USER LIKE A CONSULTANT
- ACT
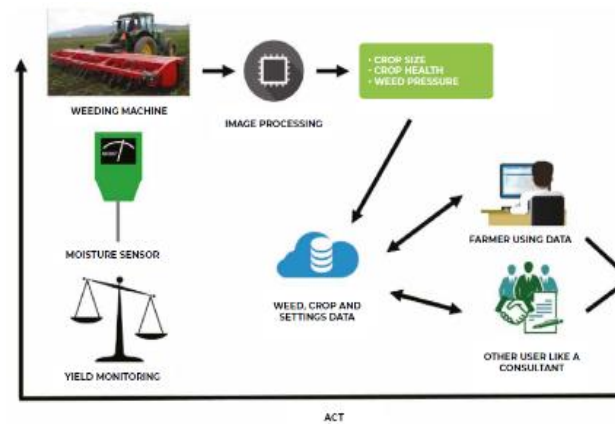
THE IMPACT

OUR OBJECTIVES

Through improved crop and field monitoring, resulting in better field management we aim to reduce the labor required for organic crop production, while improving the yield.

ON ECONOMY

· Crop yield +5%,
· Sales turnover +5%.

OTHER IMPACT

· Work time -5%,
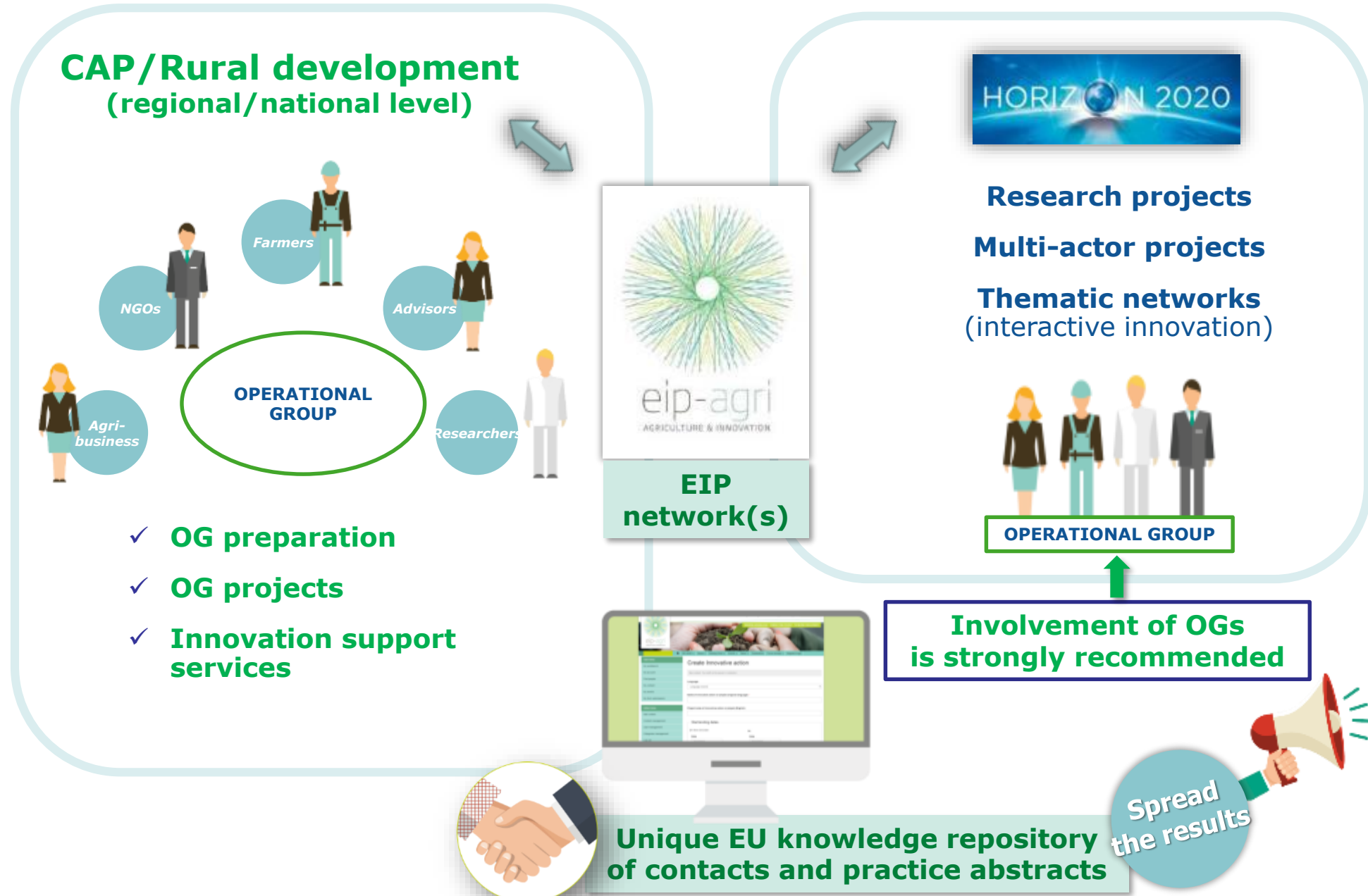· Prediction uncertainty -10%.

COUNTRIES

Main messages:
- Integration of apps/platforms
- Integration of data
- Demo or Die

European Commission

Connecting policies:
the bigger EIP picture

CAP/Rural development
(regional/national level)

Farmers

NGOs

Advisors

Agri-business

OPERATIONAL GROUP

Researchers

✓ **OG preparation**

✓ **OG projects**

✓ **Innovation support services**

eip-agri
AGRICULTURE & INNOVATION

EIP network(s)

HORIZON 2020

Research projects

Multi-actor projects

Thematic networks
(interactive innovation)

OPERATIONAL GROUP

**Involvement of OGs
is strongly recommended**

**Unique EU knowledge repository
of contacts and practice abstracts**

Spread the results

EIP-AGRI – Where are we?

- ✓ *27 Member States, 98 rural development programmes implementing the EIP*

- ✓ *Around 3 200 OGs planned in 2014-2020; more than 1200 OGs already running*

- ✓ *Around 10% of OGs foster digital technologies in agriculture*

- ✓ *Around 180 H2020 multi-actor projects, including 34 thematic networks*

- ✓ **An increasing volume of practice-oriented knowledge !**
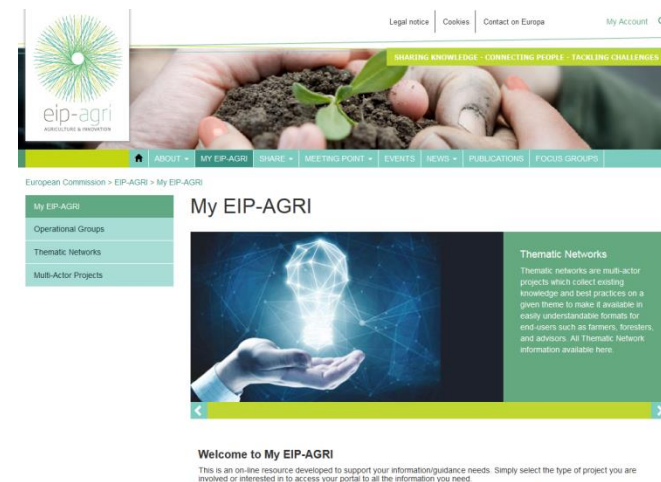
www.eip-agri.eu

Selected policy instruments post 2020

Common Agricultural Policy

- European Partnership for Agricultural productivity and Sustainability (EIP-AGRI)

- Measures supporting capacity building among famers and their advisors

Horizon Europe

- Tailored Horizon Europe themes

- Horizon Europe Candidate Partnership "Agriculture of Data"

Digital Europe Programme

- Common European Agriculture Data Space

- Testing and Experimentation facilities for AI in agri-food

- Digital Innovation Hubs
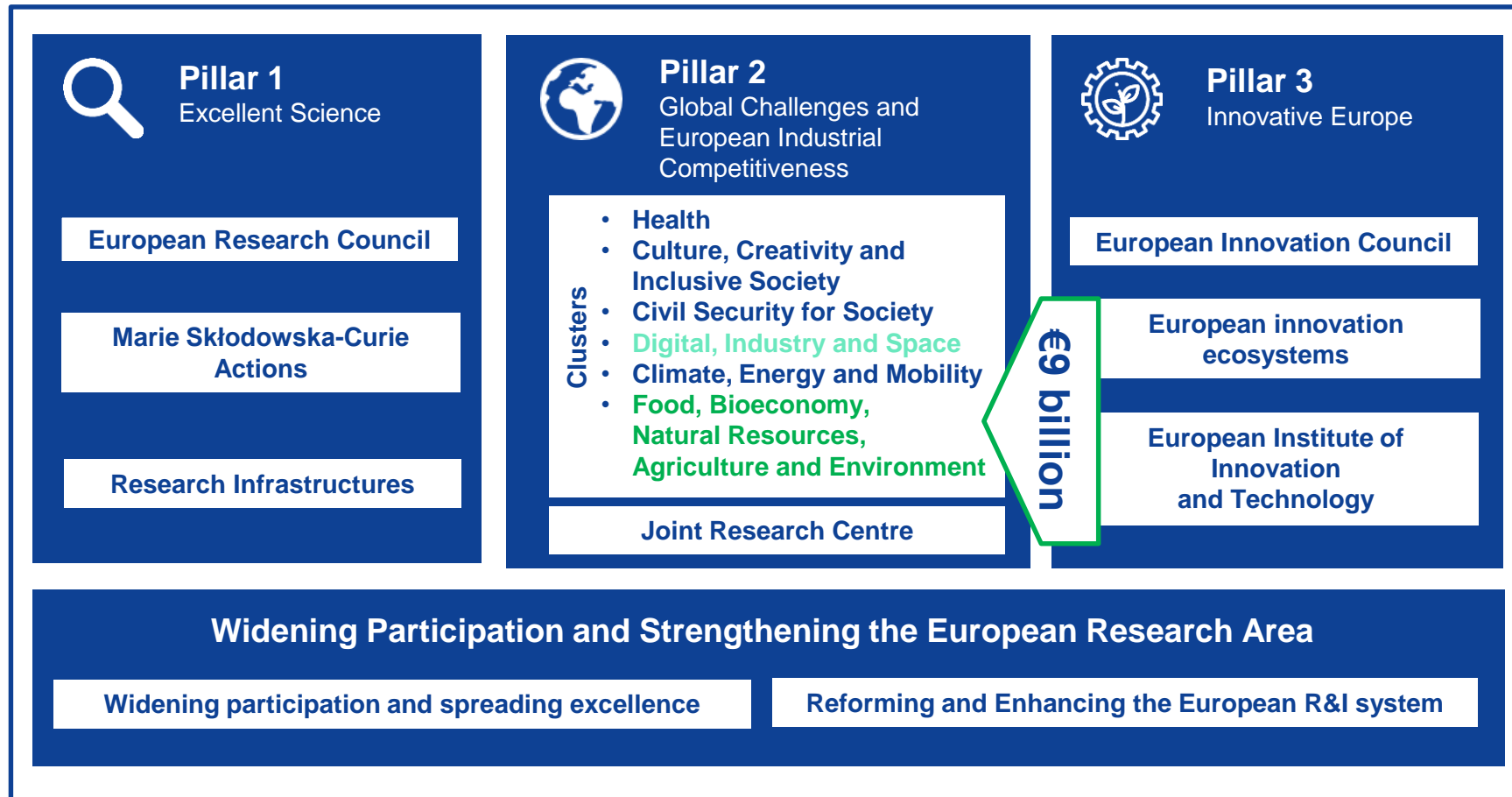
- Support to advanced digital skills

Future Rural Development Policies

Examples of relevant support measures

- Investments in broadband

- Investments in digital technologies

- Advisory services

- European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) (upgraded)

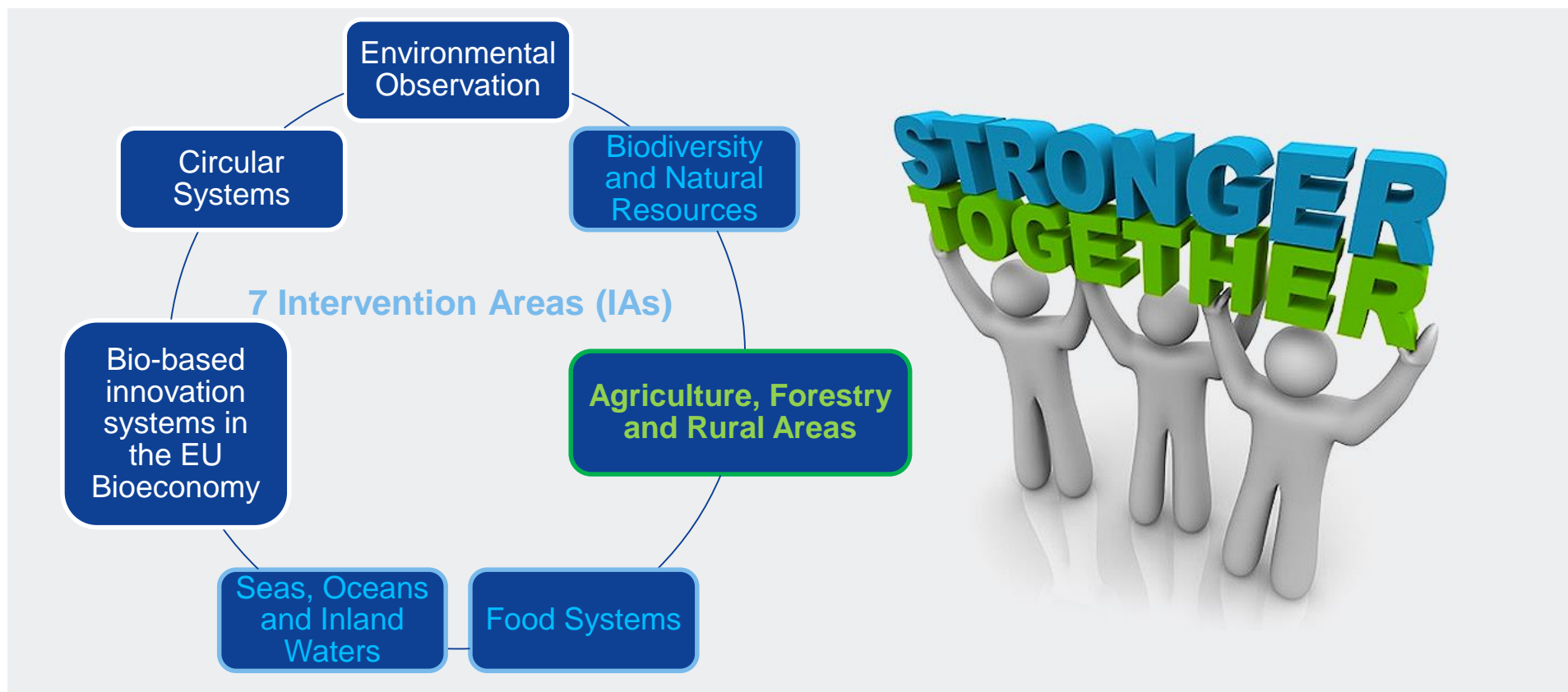- Agricultural Knowledge and Innovation Systems (AKIS)

Horizon Europe: structure

Pillar 1
Excellent Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
Global Challenges and 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

Joint Research Centre

€9 billion

Pillar 3
Innovative Europe

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area

- Widening participation and spreading excellence
- Reforming and Enhancing the European R&I system

European Commission

Cluster 6 Food, Bioeconomy, Natural Resources, Agriculture and Environment

We work with…

7 Intervention Areas (IAs)

- Environmental Observation
- Biodiversity and Natural Resources
- Circular Systems
- Bio-based innovation systems in the EU Bioeconomy
- Agriculture, Forestry and Rural Areas
- Seas, Oceans and Inland Waters
- Food Systems

…and across clusters

European Commission

Digitalisation in Horizon Europe Cluster 6

- First Work programme still under preparation

- Targeted themes supplementing large-scale projects on digitalization in agriculture under Horizon 2020.

- Themes are expected to help to e.g. to overcome challenges going along with the digital transition:

  - Ability to monitor and benchmark – Lack of data on the uptake of digital technologies in the agricultural sector.

  - Avoiding a digital divide between regions or types of farms.

  - Preparing rural communities for changes in employment structures and for making use of digital technologies.

Challenges to be met *(a selection)*

- **Ability to monitor and benchmark** – Lack of data on the uptake of digital technologies in the agricultural sector.

- **Avoiding a digital divide** between regions and types of farms.

- Preparing rural communities for **changes in employment structures** and for making use of digital technologies.

Encouraging synergies through partnerships between the EU and Member States

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**

European Commission

Candidate partnership Agriculture of Data

Proposed for Horizon Europe Work Programme 2023/24

<u>Principal Objectives</u>

- Using the possibilities offered by data technologies in the field of Environmental Observation to
    - provide support to improve the sustainability performance of agricultural production;
    - Improve the capacities for policy monitoring and evaluation.

Digital Europe Programme - Testing and Experimentation Facilities for AI

- Planned for the first Work Programme of the **Digital Europe Programme**

- To pave the way for deployment of AI and to boost up-take

- Greater efficiency and uniformity of testing, experimentation and validation

- Large-scale, world-class technology infrastructure for testing and experimentation

- A kind of "Trial farms"

- Exchange of experiences, visits by experts

- Links to Digital Innovation Hubs

Thank you

European Commission