



# EU RESEARCH & INNOVATION FOR A CIRCULAR AGRICULTURE

*OECD - CRP Biological Resource Management for Sustainable Agricultural Systems*

*CRP Governing Board meeting*

*30 November 2018 - Paris*

**Fabio Cossu**

**European Commission - Directorate General for Agriculture and Rural Development**

**Unit B.2 - Research and Innovation**

# Overview:



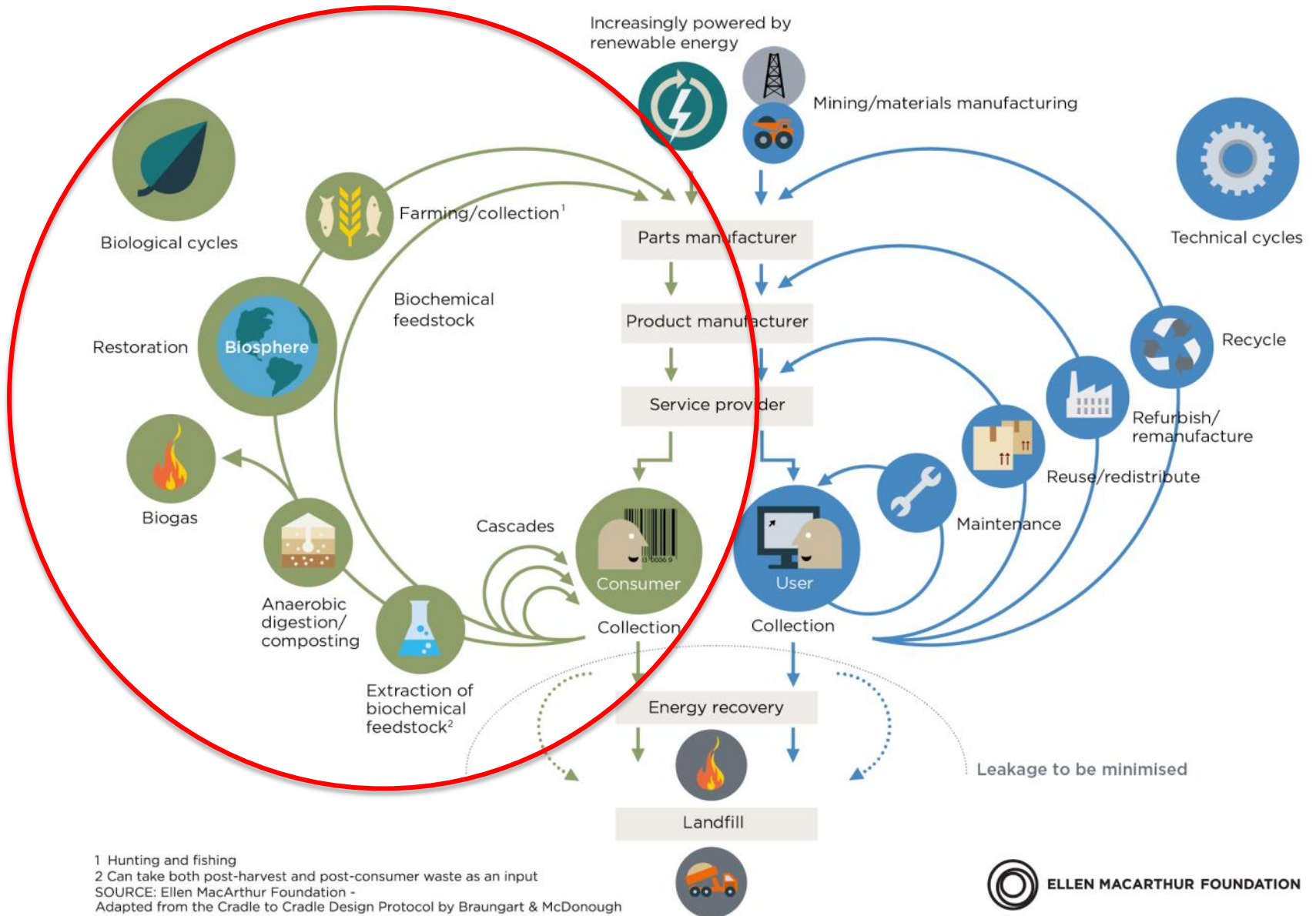
- The bioeconomy as the renewable segment of the circular economy (updated EU Bioeconomy Strategy)
- EU R&I funding and the CAP working in synergy to develop and deploy the circular(bio)economy and contribute to a more resource efficient agriculture with farmers at the centre
- Guaranteeing higher ambitions for the future with greater use of knowledge and innovation

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**CIRCULAR ECONOMY - an industrial system that is restorative by design**



<sup>1</sup> Hunting and fishing

<sup>2</sup> Can take both post-harvest and post-consumer waste as an input

SOURCE: Ellen MacArthur Foundation -

Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

# The updated EU Bioeconomy Strategy 2018



## EU Bioeconomy Conference 2018

**Sustainable & Circular Bioeconomy,  
the European way**

**22 October 2018  
Brussels**

**Website:  
<https://bit.ly/2yvLKXM>**

Europe's  
**bioeconomy**  
weaving it all together

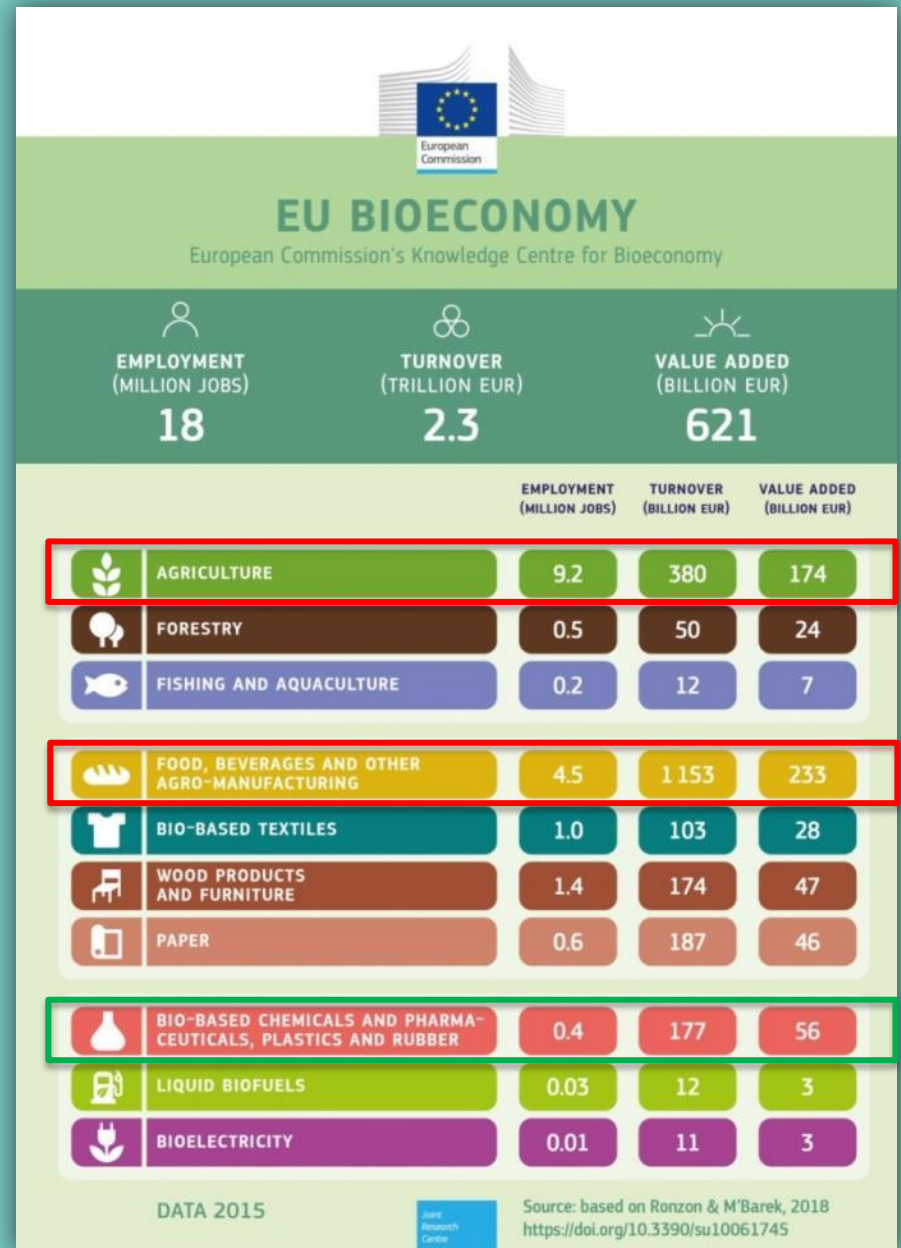


European  
Commission

# The European Bioeconomy in numbers

Realising the potential of the Bioeconomy requires investments, innovation, developing strategies and implementing **systemic** changes that cut across different sectors

(agriculture, forestry, fisheries, aquaculture, food, biobased industry).





European Commission



# A sustainable Bioeconomy for Europe: strengthening the connection between economy, society and the environment

Updated Bioeconomy Strategy



Research and Innovation

1

## STRENGTHEN AND SCALE-UP THE BIO-BASED SECTORS, UNLOCK INVESTMENTS AND MARKETS



Mobilise stakeholders in development and deployment of sustainable bio-based solutions



Launch the EUR 100 million Circular Bioeconomy Thematic Investment Platform



Analyse enablers and bottlenecks for the deployment of bio-based innovations



Promote and develop standards, labels and market uptake of bio-based products



Facilitate the development of new sustainable biorefineries



Develop new biodegradable products, including bio-based plastic substitutes

2

## DEPLOY LOCAL BIOECONOMIES RAPIDLY ACROSS EUROPE



Launch a Strategic Deployment Agenda for sustainable food and farming systems, forestry and bio-based products



Launch pilot actions for the development of bioeconomies in rural, coastal and urban areas



Support regions and Member States to develop Bioeconomy Strategies



Promote education, training and skills across the bioeconomy

3

## UNDERSTAND THE ECOLOGICAL BOUNDARIES OF THE BIOECONOMY



Enhance knowledge on biodiversity and ecosystems



Monitor progress towards a sustainable bioeconomy



Promote good practices to operate the bioeconomy within safe ecological limits



Enhance the benefits of biodiversity in primary production

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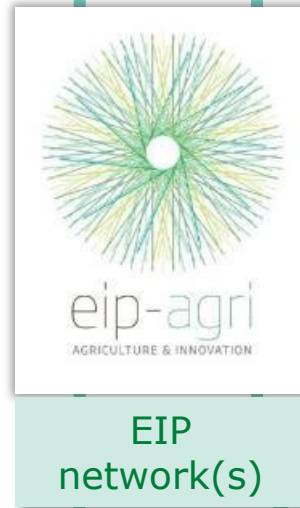
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# EU Research & Innovation funding for agriculture

**CAP /Rural development**  
(regional/national level)

**HORIZON 2020**  
(European projects)



- **Research projects** (knowledge base)
- **Multi-actor projects and thematic networks** (interactive innovation)



*Funding for:*

**OG preparation**

**OG projects**

**Innovation support services**



Unique EU knowledge repository  
of contacts and practice abstracts

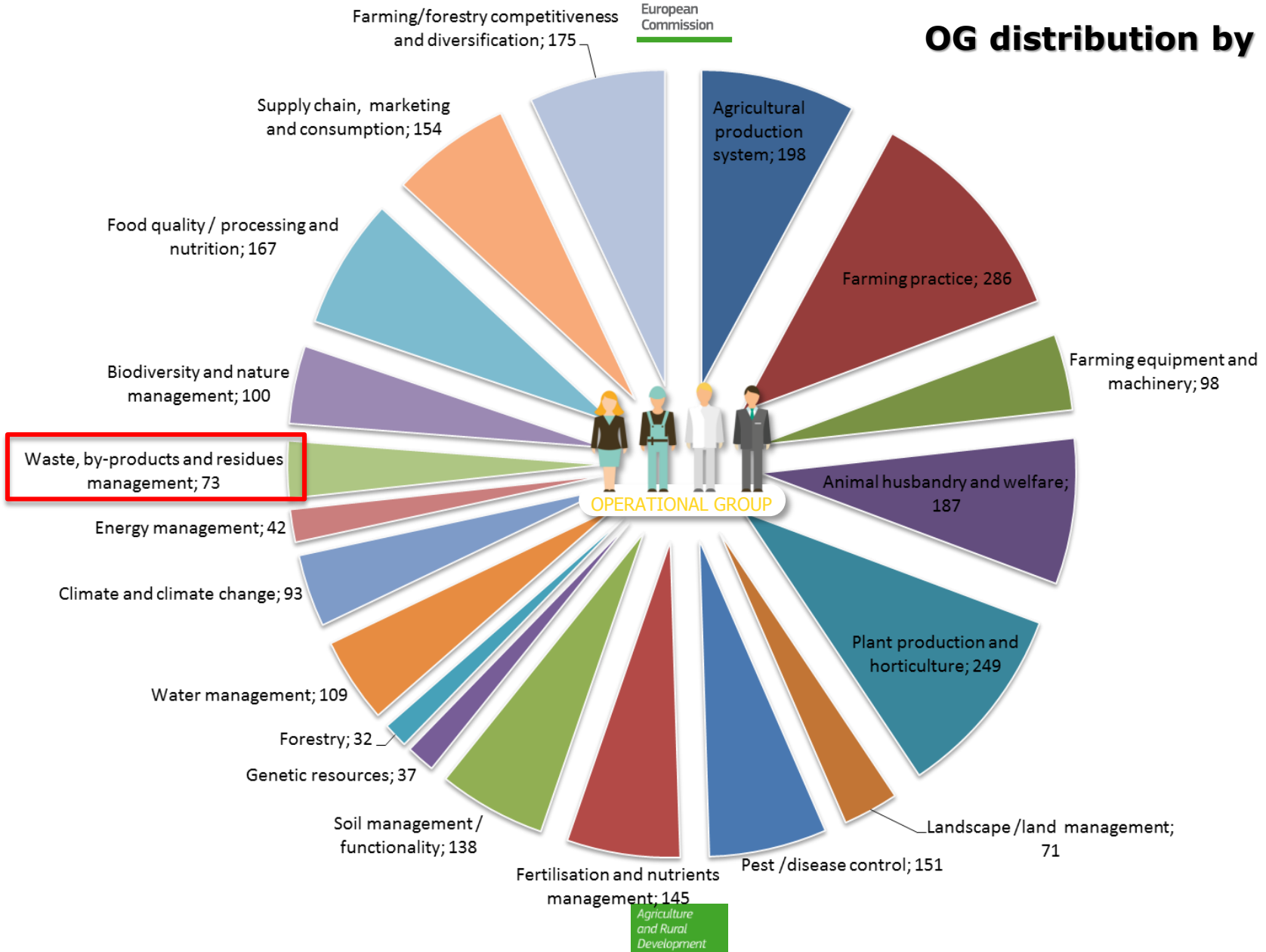


Spread  
the results



European Commission

# OG distribution by theme



Agriculture and Rural Development



## Operational Group **FLAMBE**

*Emilia-Romagna (IT) (2017-19)*

- Treatment of waste:
- Digestion by larvae → fats and proteins → biodiesel and biogas
- Pyrolysis of residue → energy, biochar, food additives
- Multi-actor, practice-oriented!
- Local, small-scale (200.000 €)



## OG Biorefinery “Glas” (IE)

*Small-scale farmer-led green biorefineries  
2-year project 2019-2020*

- First demonstration of small-scale biorefining in Ireland
- Changing the role of farmers in the bioeconomy
- Optimises the use of grass by separating it into a spectrum of co-products
- 5 partners



# R&I funding opportunities



## In 2019:

CE-SFS-39-2019: High-quality organic fertilisers from biogas digestate (EU-China) → € 5 M

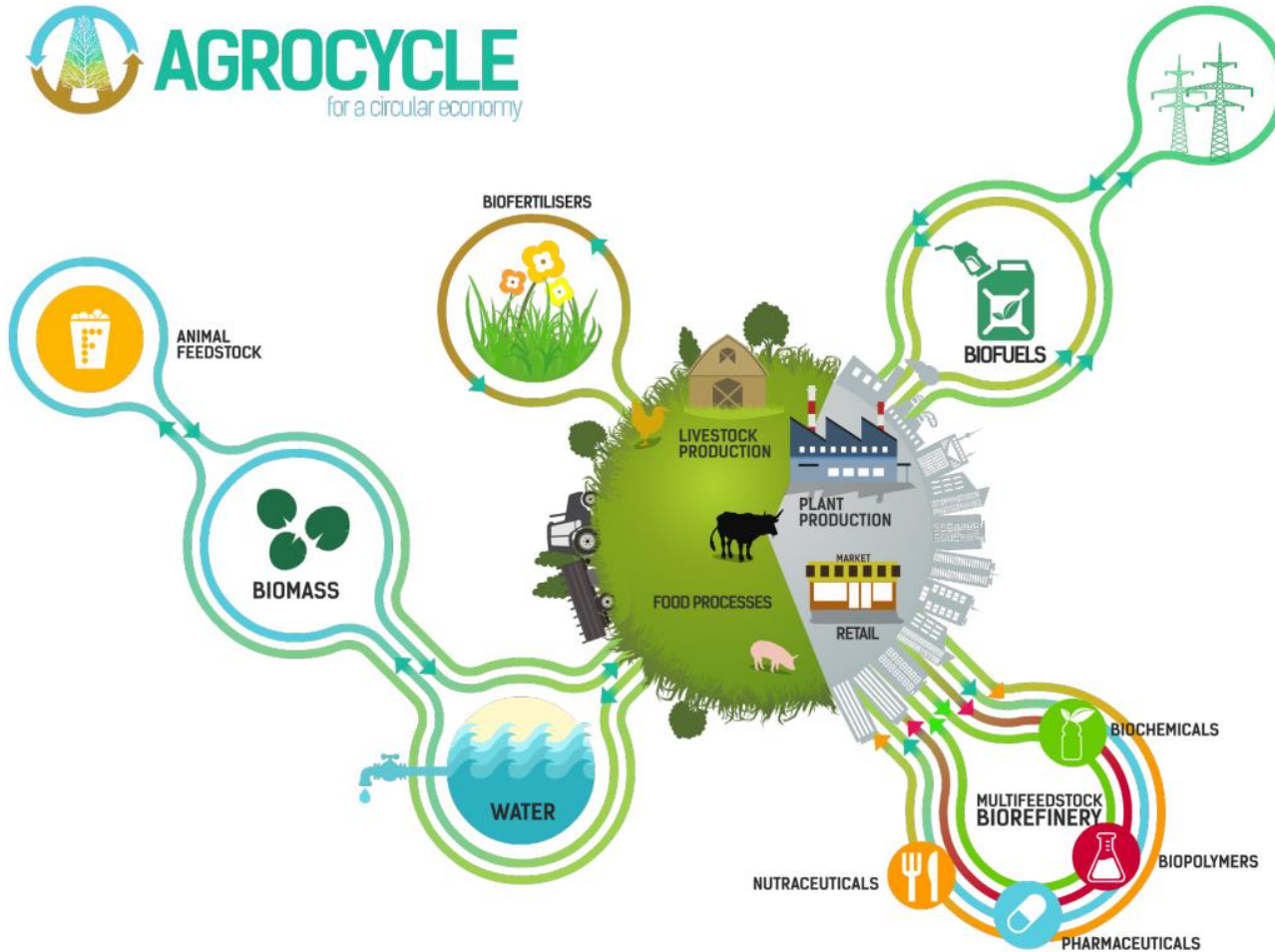
CE-RUR-08-2018-2019-2020-B: Bio-based fertilisers from animal manure (IA) → € 8 M

CE-RUR-10-2019: Circular bio-based business models for rural communities → € 20 M

## In 2020:

CE-RUR-08-2018-2019-2020-C: Bio-based fertilisers from other by-products of the agro-food, fisheries, aquaculture or forestry sectors (IA)

CE-SFS-36-2020 - Diversifying farmers' income through small bio-based concepts (EU-Africa)



[www.agrocycle.eu](http://www.agrocycle.eu)

Jun 2016 - May 2019

€ 7 M EU contribution

25 partners

EU-China cooperation

Holistic food chains  
analysis

Fuels & energy,  
fertiliser, chemicals,  
biopolymers, etc.

Multi-actor



**Biomass Innovation  
Design Hub  
HUNGARY**

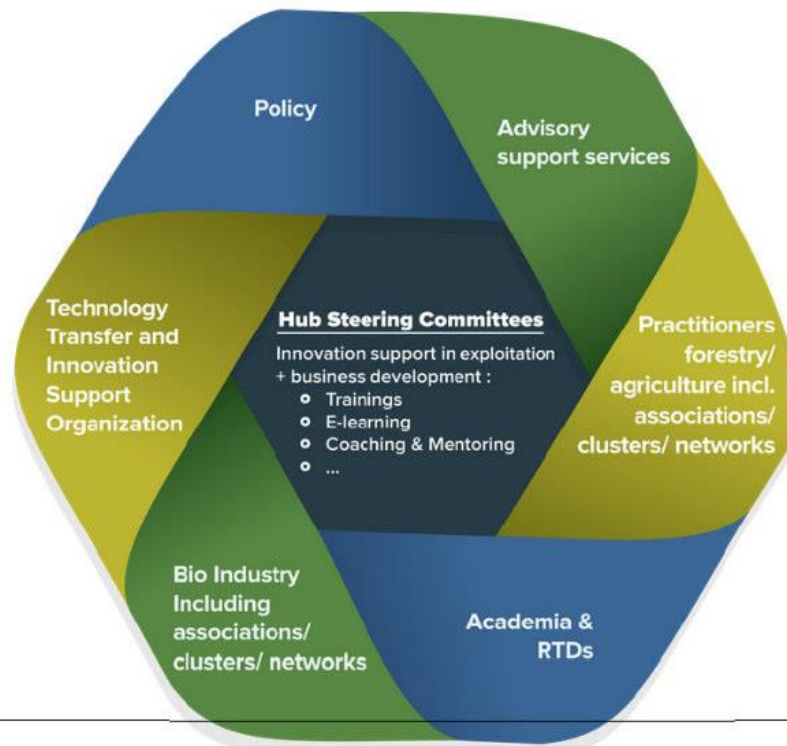
HUB MANAGER

**Biomass Innovation  
Design Hub  
ANDALUCIA**

HUB MANAGER

**Biomass Innovation  
Design Hub  
IRELAND**

HUB MANAGER



Thematic Network

Mar 2016 – Aug 2018

2 M €

16 partners

Non-food value chains

Target: farmers, foresters, (bio)industry, researchers

3 'Biomass Innovation Design Hubs'

Sidestream Value tool

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



# R&I funding opportunities

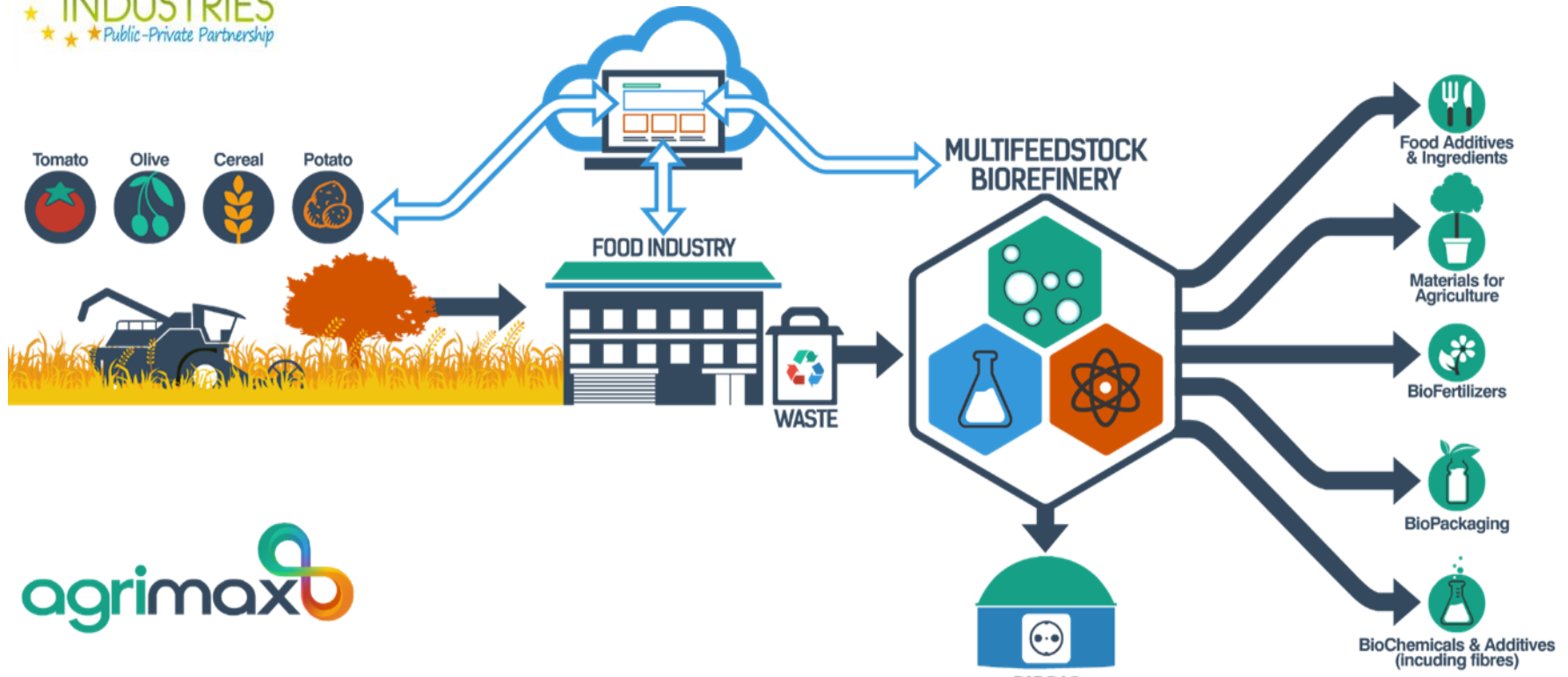


2018 Work Programme (closed 6 Nov 2018)

*BBI 2018. SO1.D1 – Improve the logistical and pre-processing steps of locally sourced biomass to serve as feedstock for the bio-based industry → 7 M €*

More R&I opportunities for circular value chains: <https://bit.ly/2NjewjD>





Oct 2016 – Sep 2020

€ 12.5 M EU contribution

Demonstrating **combined flexible biorefinery processes** for valorising crops & food processing wastes.

**Final products:** bio-packaging, food products, bio-based agricultural products (e.g. bio-degradable mulching films and pots, biofertilisers), bioenergy...

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

## Knowledge exchange within EIP-AGRI:

Workshop '**Building new biomass supply chains for the bio-based economy**', 27-28 May 2015, Sardinia

Workshop '**Opportunities for Agriculture and Forestry in the Circular Economy**' 28-29 October 2015, Finland

Focus Group on **Nutrient recycling**: *How to improve the agronomic use of recycled nutrients (N and P) from livestock manure and other organic sources?*

Focus Group on '**Circular horticulture**': *How to increase circularity in protected horticulture?*

Focus Group on **enhancing production and use of renewable energy on the farm**





**EIP-AGRI WORKSHOP** OPPORTUNITIES FOR FARM  
DIVERSIFICATION IN THE CIRCULAR BIOECONOMY  
**6-7 FEBRUARY 2019- VILNIUS, LITHUANIA**

eip-agri  
AGRICULTURE & INNOVATION

funded by  European  
Commission

Circular economy as important source of diversified and stable **income** for farmers and foresters, high quality **job** creation, **competitiveness and growth** in rural areas,

Focus: innovative business models that make better use of waste streams, for example:

- developing new products
- developing joint initiatives with the industry

<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-workshop-opportunities-farm>

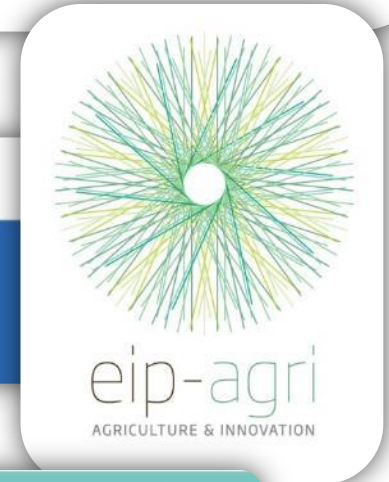
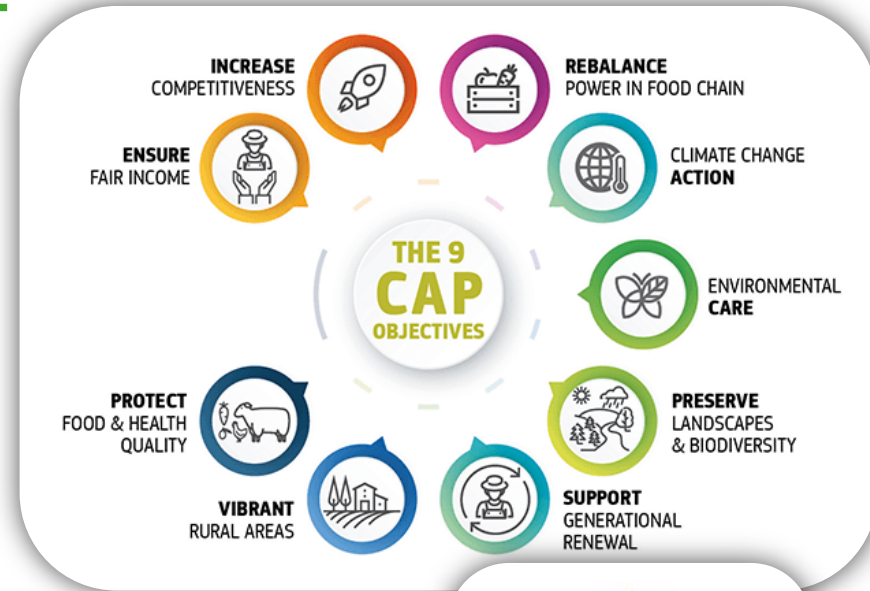
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## CAP and R&I working together for the circular (bio)economy

- CAP proposal promotes the bioeconomy
- *CAP strategic plans articulated with bioeconomy strategies*
- More emphasis on rural development
- Articulation with EIP-AGRI
- €10 bn under Horizon Europe for food and natural resources, including the bioeconomy (*EC proposal*)



# Thank you

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European Commission

DG Agriculture and Rural Development

Unit B.2 - Research and Innovation

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