

## **Meeting Societal Challenge 2**

# **Evolution of approaches to impact from Framework Programme 5 to Horizon 2020**

**Donal Murphy-Bokern**



**Katerina Moutou, University of Thessaly, Greece**  
**Felice Addeo, University of Salerno, Italy**  
**Ruxanda Berlinschi, KU Leuven, Belgium.**  
**Angela Delli Paoli, University of Salerno, Italy**  
**Daniel Neicu, KU Leuven, Belgium, France**  
**Peter Teirlinck, KU Leuven, Belgium**

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Transfer Conference 2017**

**7 November 2017**

**Evolution of approaches to impact from FP5 to Horizon 2020**



# Agriculture and the marine?





**On 25 June 1731 the first meeting of the Dublin Society was held in the Philosophical Rooms of Trinity College, Dublin. The Dublin Society's founding aims were to assist in the improvement of “husbandry [agriculture], manufactures and other useful arts...” in Ireland.**



INSTRUCTIONS  
FOR  
MANAGING  
B E E S.

Drawn up and Published by Order of  
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# THE PENNY MAGAZINE

OF THE  
Society for the Diffusion of Useful Knowledge.

[23.]

PUBLISHED EVERY SATURDAY.

[MARCH 1, 1834,

THE MANGO TREE.



[Mango Tree.]

THE Mango-tree is a native of India and the south-western countries of Asia, and also grows abundantly in Brazil and the West Indies. It was introduced into Jamaica in the year 1782. It is a large tree, attaining

skin; and upon removing that, a pulp, which has some appearance of consistency, but which melts in the mouth with a cooling sweetness that can hardly be imagined by those who have not tasted that choicest of nature's









**AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY**

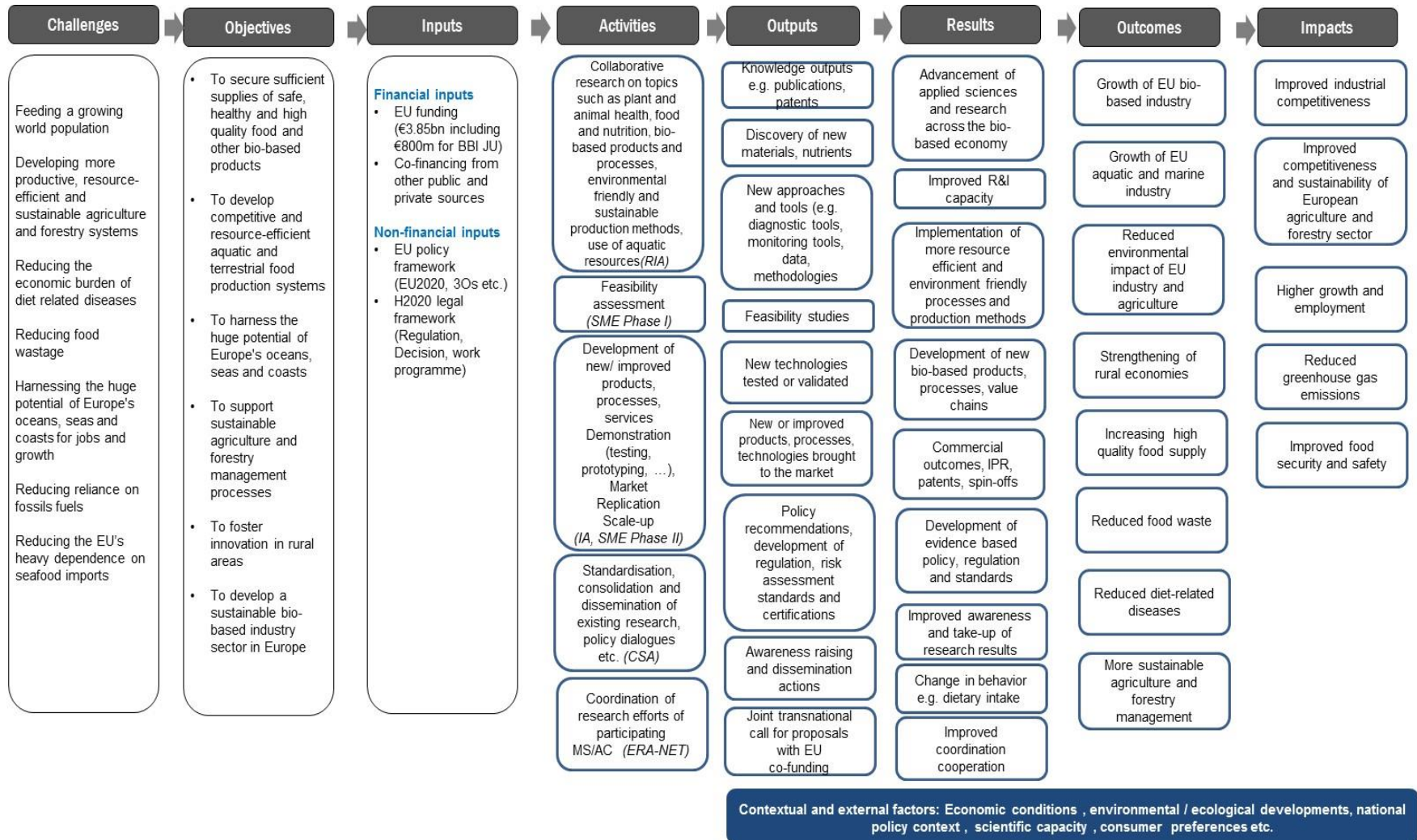




**Agricultural knowledge transfer is one of the oldest civilian public services (at least in the West)**

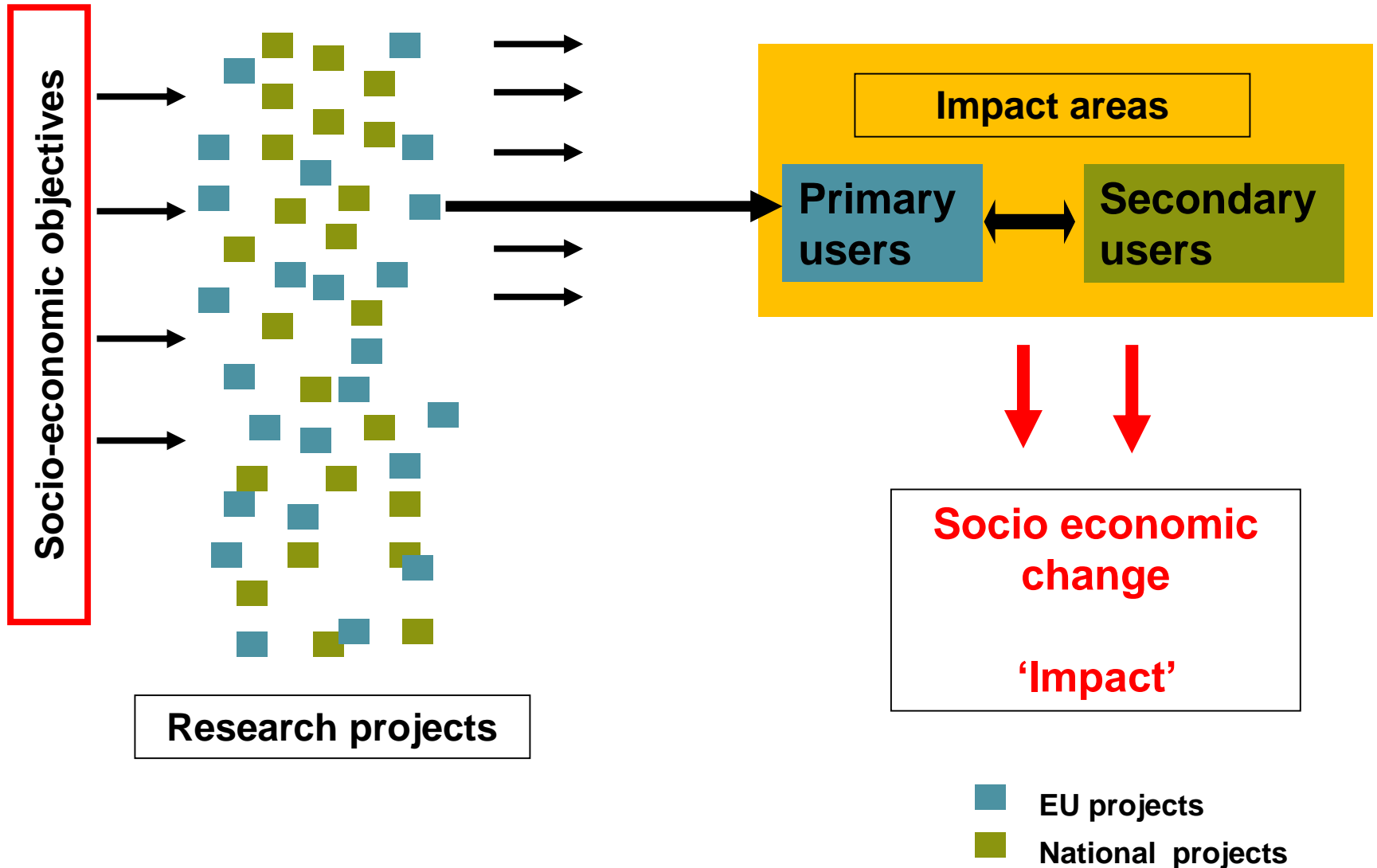


# What is impact?





# How is impact generated?



# An example – dairy cow improvement

2007

2008

2009

2010

2011

2011

2012

2013



**Photo: Irish Cattle Breeders Federation**



# **An example – dairy cow improvement**

**2007**

**2008**

**2009**

**2010**

**2011**

**2011**

**2012**

**2013**

**Reduction of N excretion in ruminants**

**Breeding tools for improved livestock products (2007)**



**Photo: Irish Cattle Breeders Federation**

# An example – dairy cow improvement

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2010

2011

2011

2012

2013

Approaches to  
reduce N  
excretion in  
ruminants

Breeding tools for  
improved dairy  
products and  
robust cows

Reduction of N excretion in  
ruminants

Breeding tools for improved  
livestock products



Photo: Irish Cattle Breeders Federation



# An example – dairy cow improvement

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Sustainable organic and low-input  
dairy production (2010)



Photo: Irish Cattle Breeders Federation

# An example – dairy cow improvement



Approaches to reduce N excretion in ruminants

Organic and low-input dairying

Breeding tools for improved dairy products and robust cows

Sustainable organic and low-input dairy production (2010)



Photo: Irish Cattle Breeders Federation



# An example – dairy cow improvement



Approaches to reduce N excretion in ruminants

Organic and low-input dairying

Breeding tools for improved dairy products and robust cows

Optimising terrestrial farm animal reproduction systems and/or technologies (2012)



# An example – dairy cow improvement

**2007**      **2008**      **2009**      **2010**      **2011**      **2011**      **2012**      **2013**

Approaches to  
reduce N  
excretion in  
ruminants

Organic and  
low-input  
dairying

Optimisation  
of  
reproductive  
success

Breeding tools for  
improved dairy  
products and  
robust cows

Robust  
improvement  
of fertility

Optimising terrestrial farm animal  
reproduction systems  
and/or technologies (2012)



Photo: Irish Cattle Breeders Federation



# An example – dairy cow improvement

**2007**      **2008**      **2009**      **2010**      **2011**      **2011**      **2012**      **2013**

Approaches to reduce N excretion in ruminants

Organic and low-input dairying

Optimisation of reproductive success

Breeding tools for improved dairy products and robust cows

Robust improvement of fertility



Development and exploitation of genomic data, tools, phenotyping approaches and breeding concepts for sustainable animal production systems (2013)

# An example – dairy cow improvement

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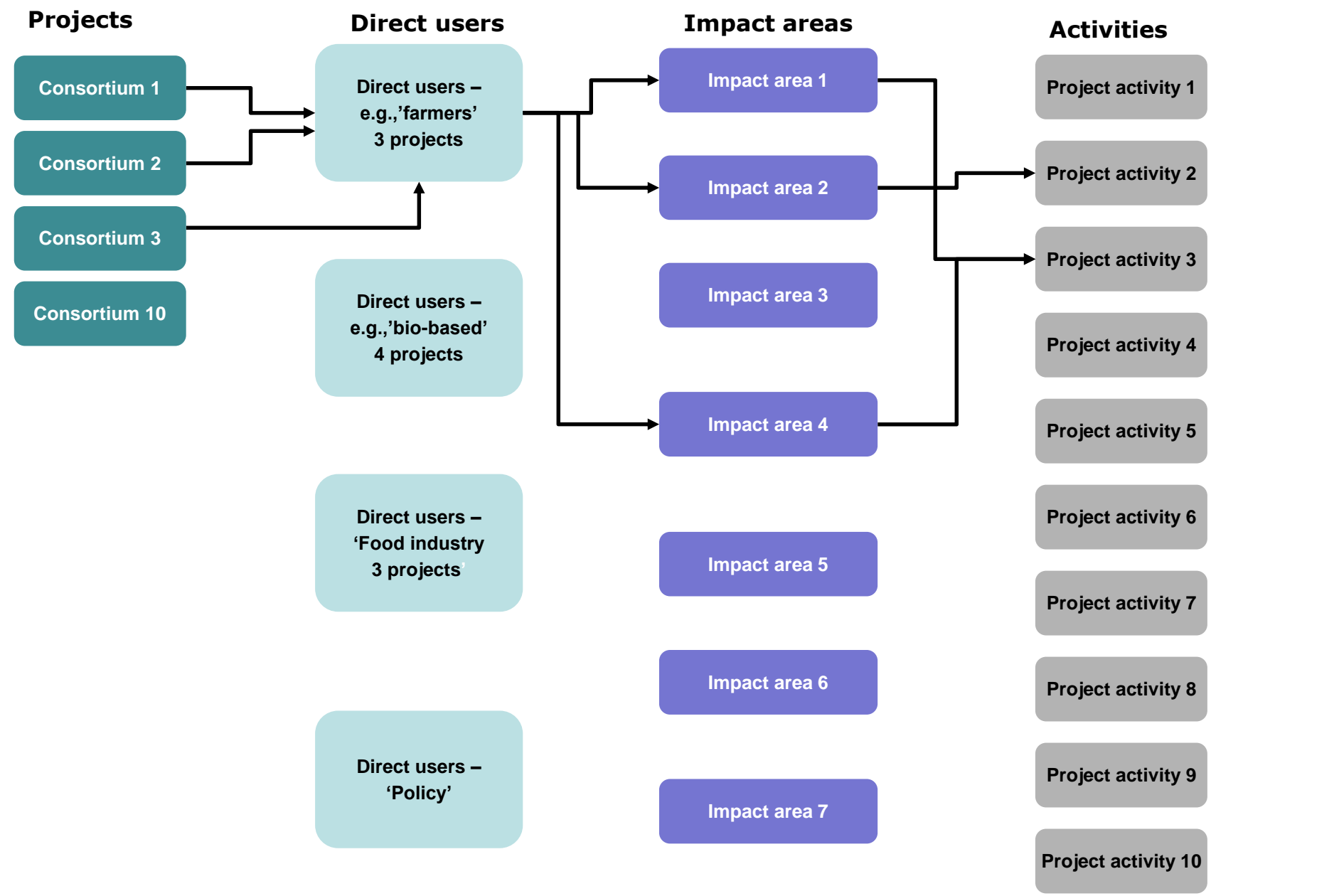


Development and exploitation of genomic data, tools, phenotyping approaches and breeding concepts for sustainable animal production systems (2013)

Development and exploitation of genomic data and tools

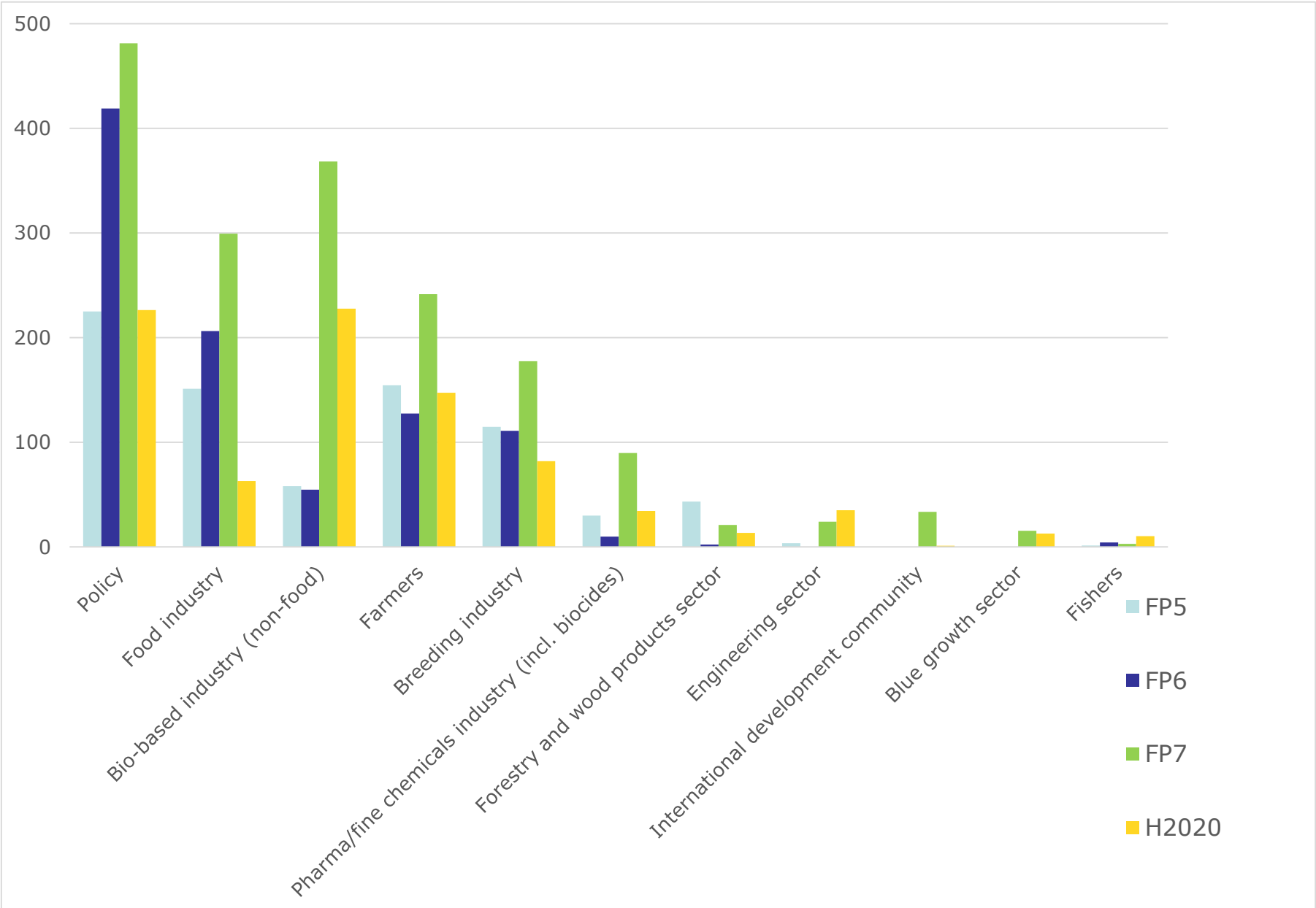
Photo: Irish Cattle Breeders Federation

# Portfolio analysis: identifying direct users, what they use results for, and the project activity for 2,305 projects

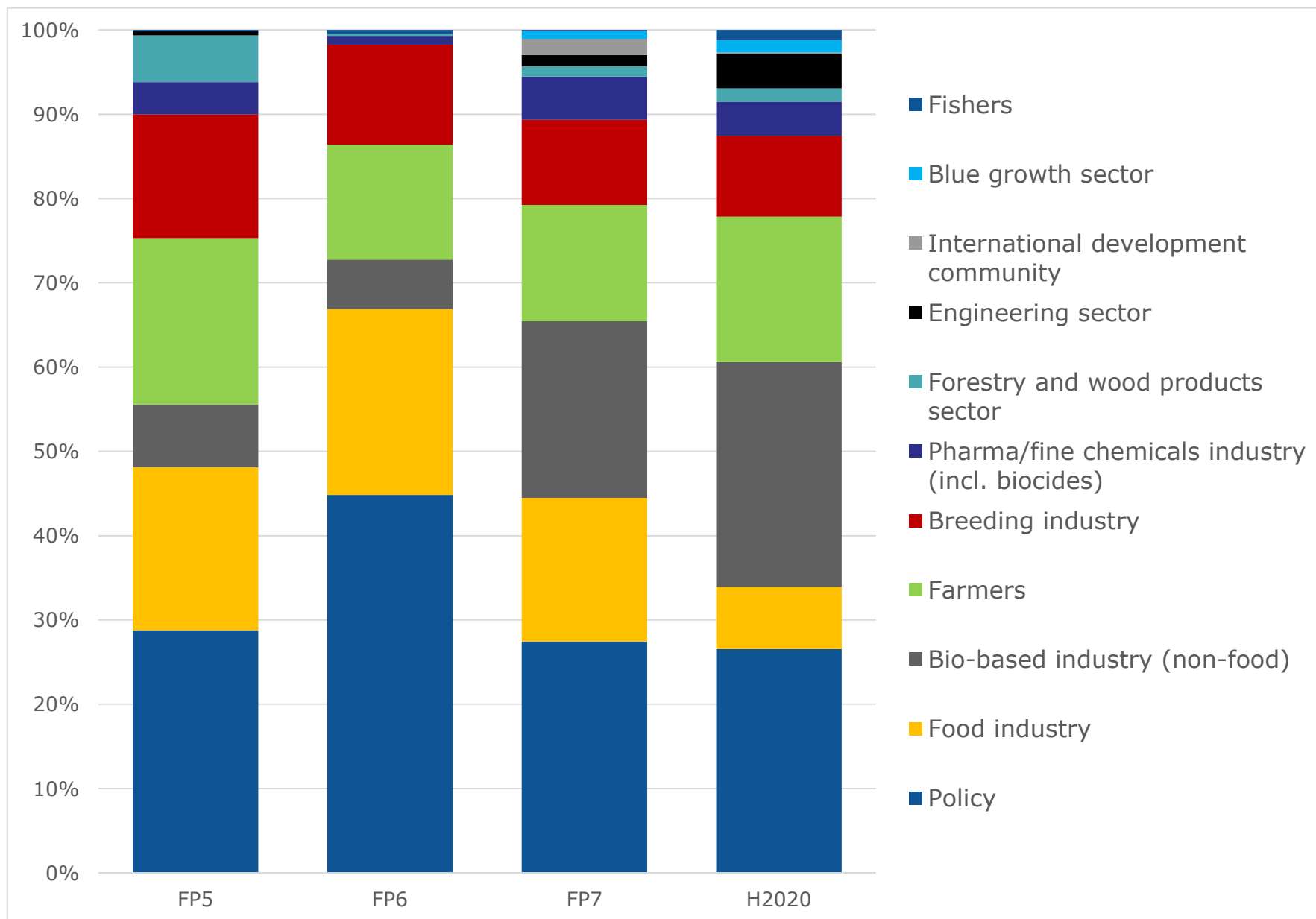




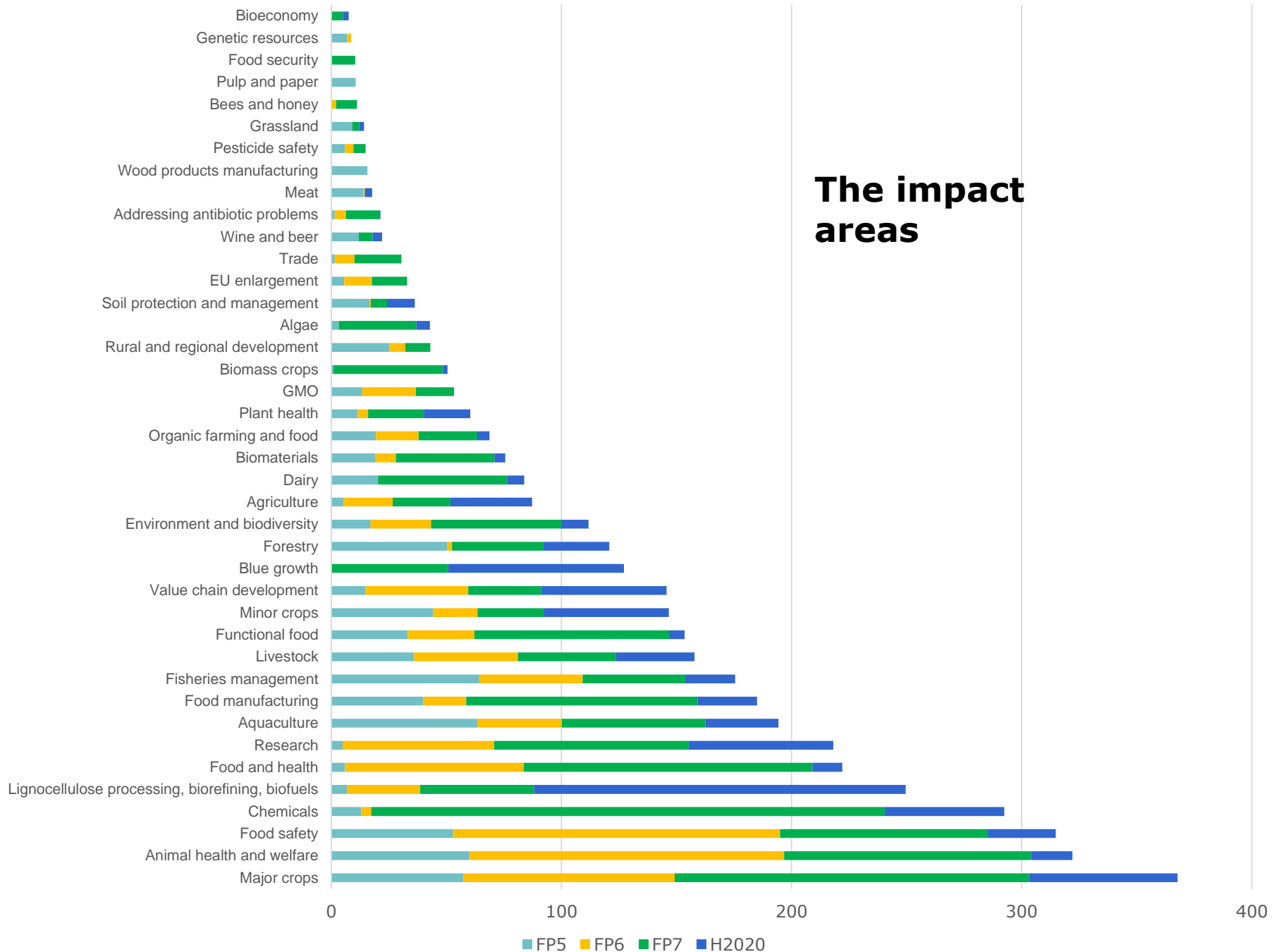
# The primary (direct) users



# The primary (direct) users – proportional funding

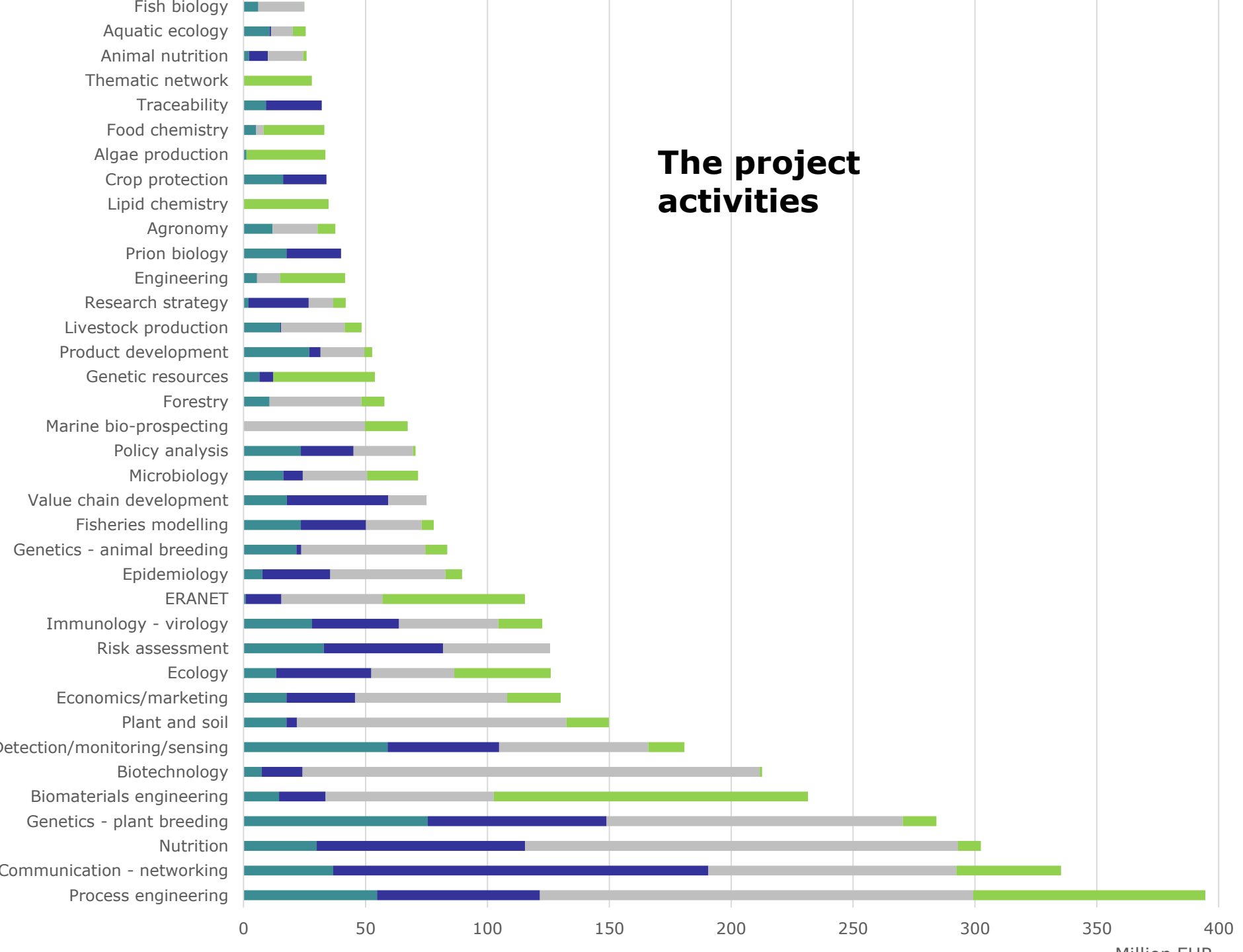


## The impact areas



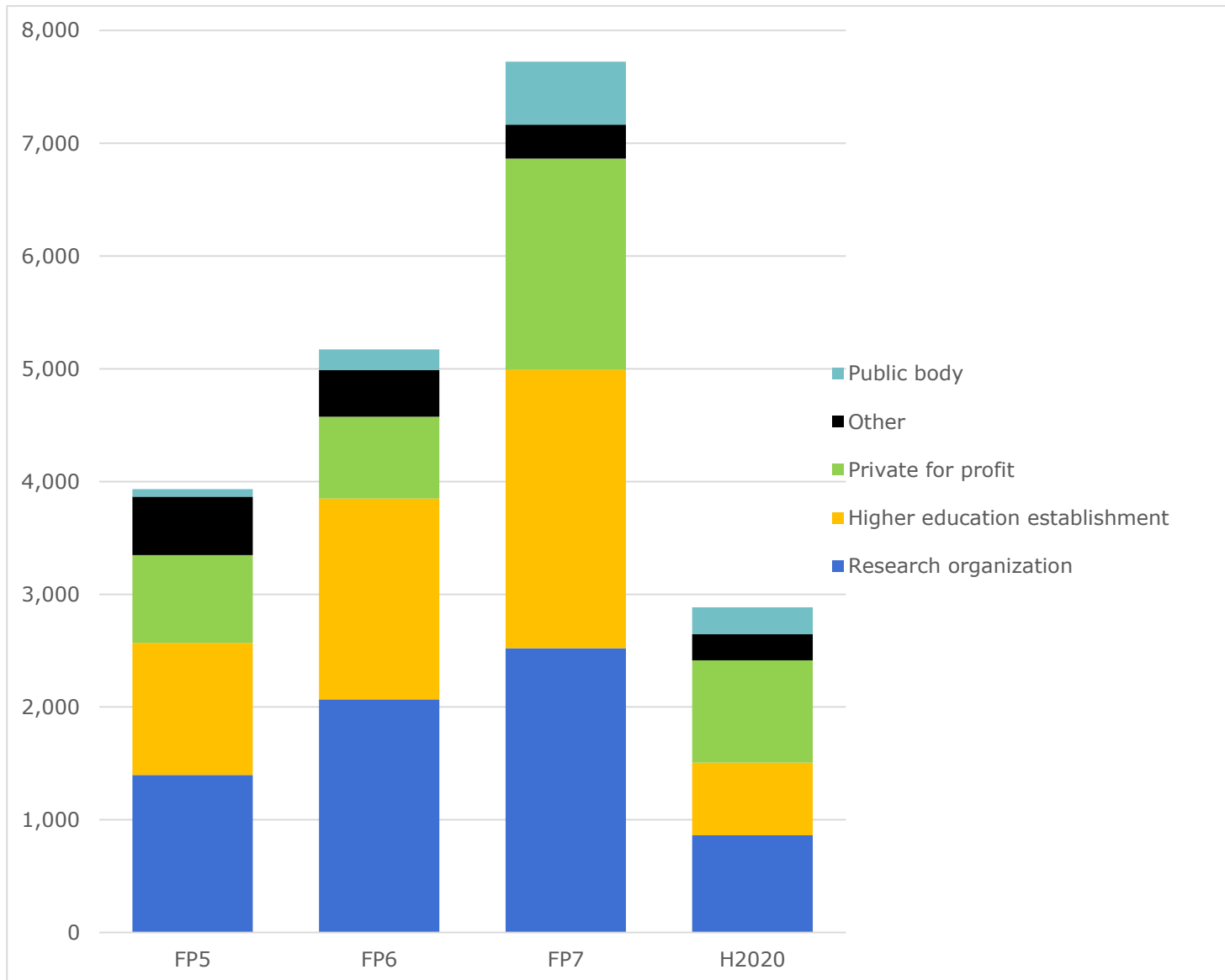


## The project activities



**How has the role of innovators and other  
uses in participation and coordination  
developed?**

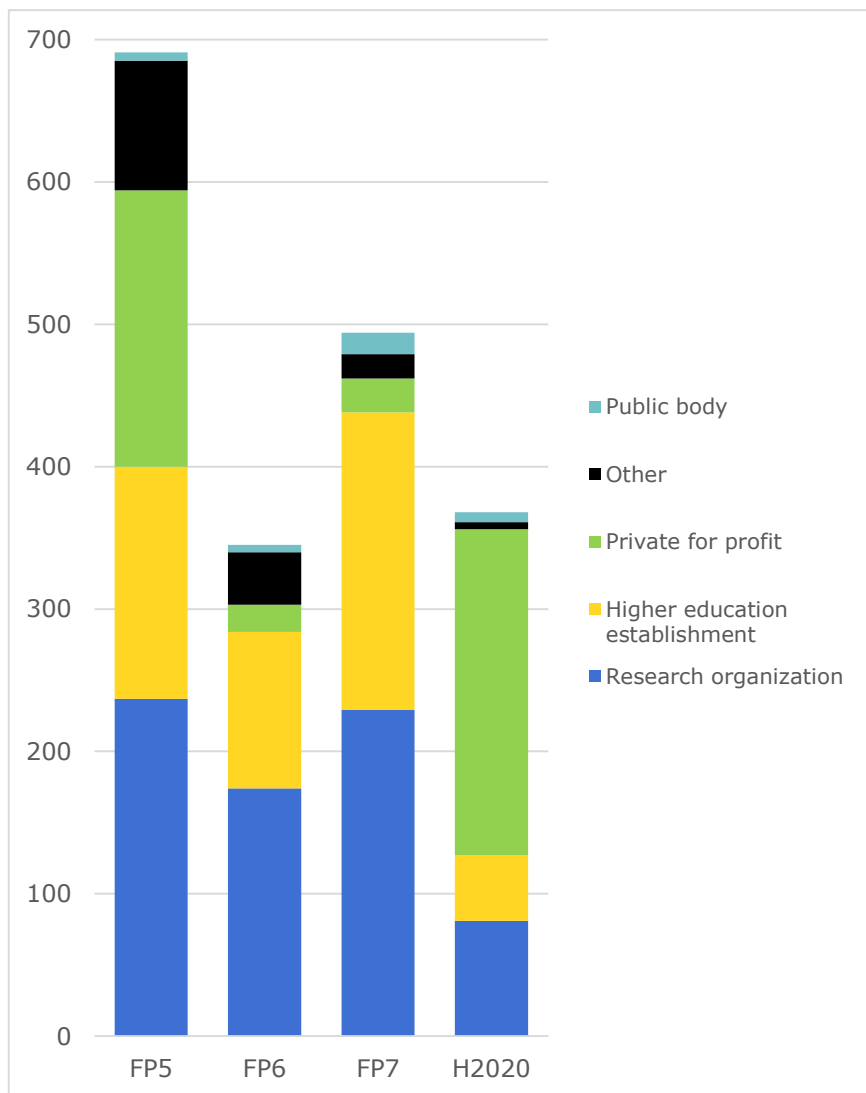
# Who is participating? - participations



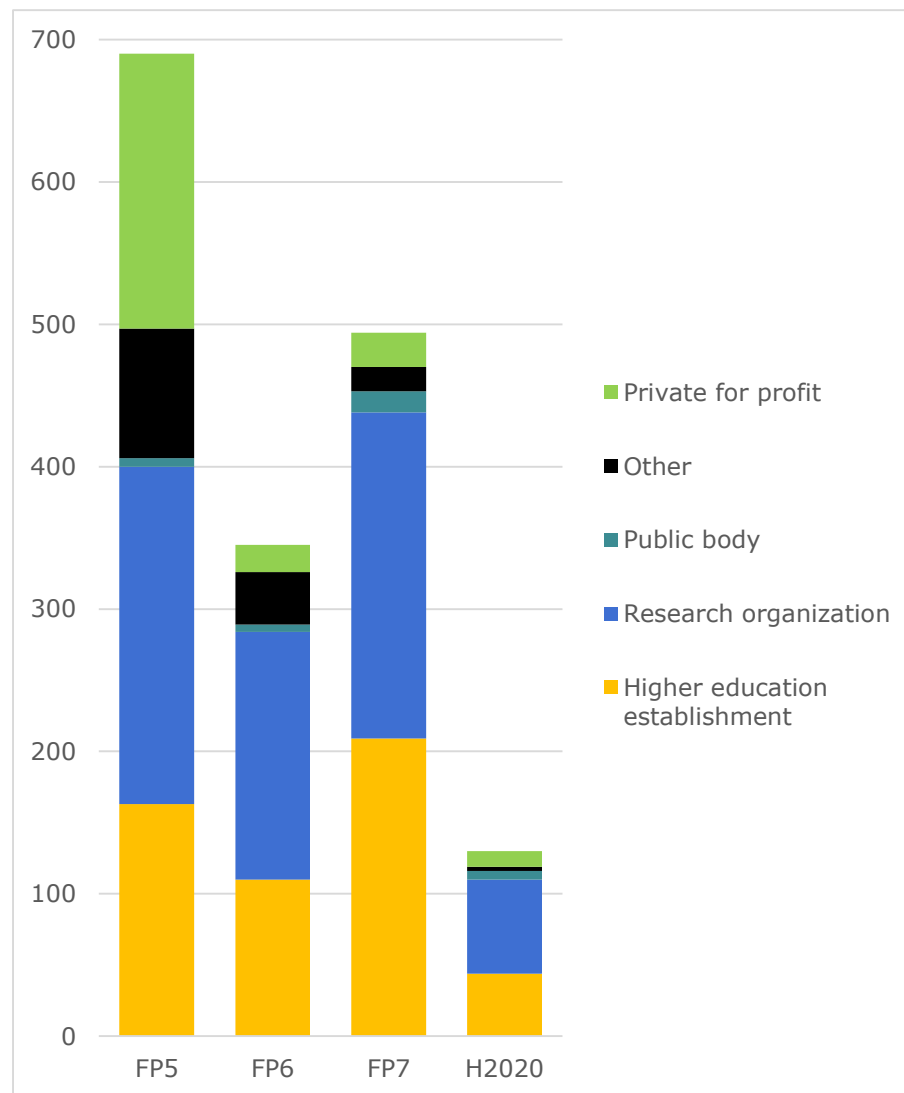


# Who is coordinating?

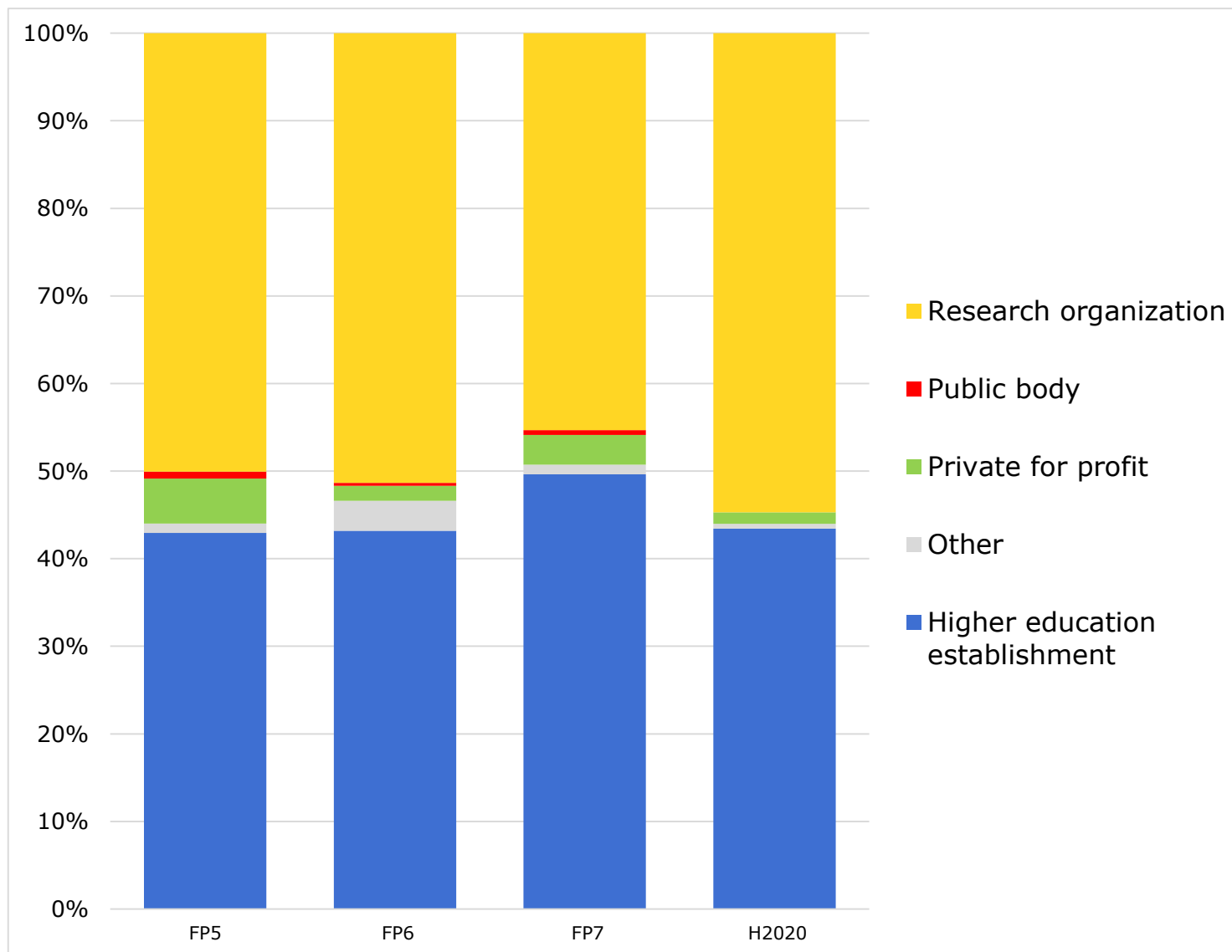
## All projects



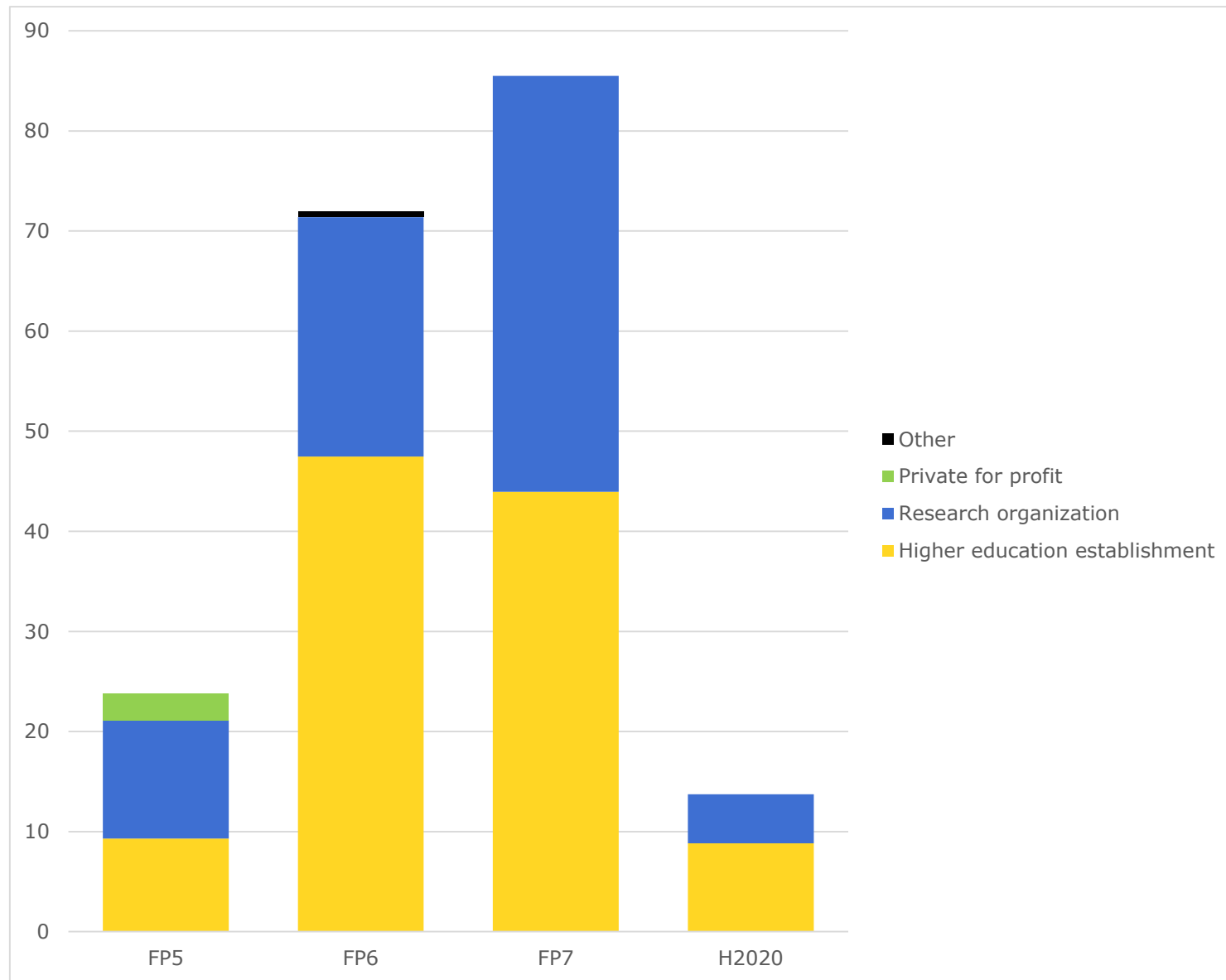
## Excluding BBI and SME



# Who is coordinating research and technological development projects?

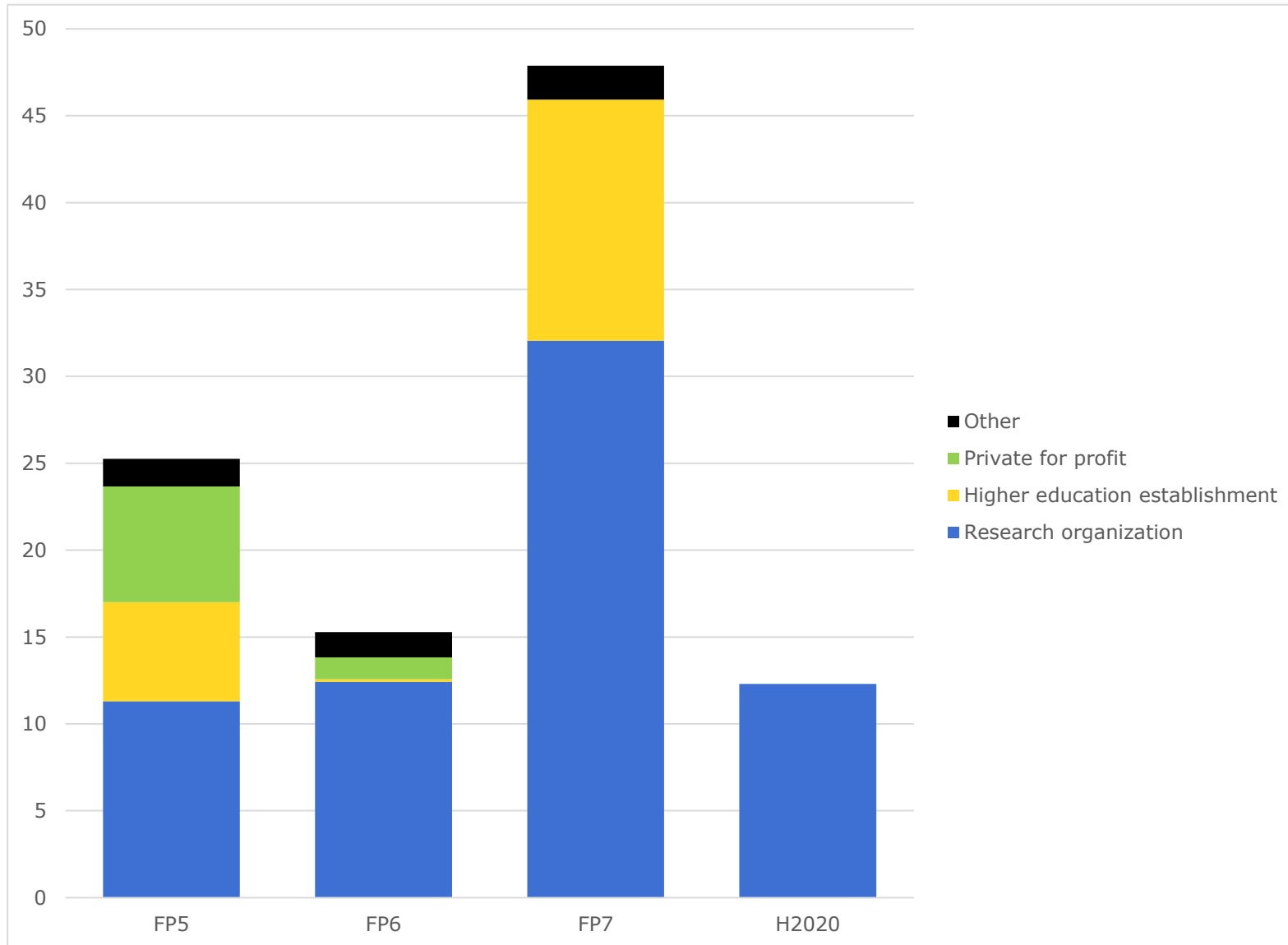


# User communities: who is coordinating projects for plant breeders? (EU contribution in million Euro)

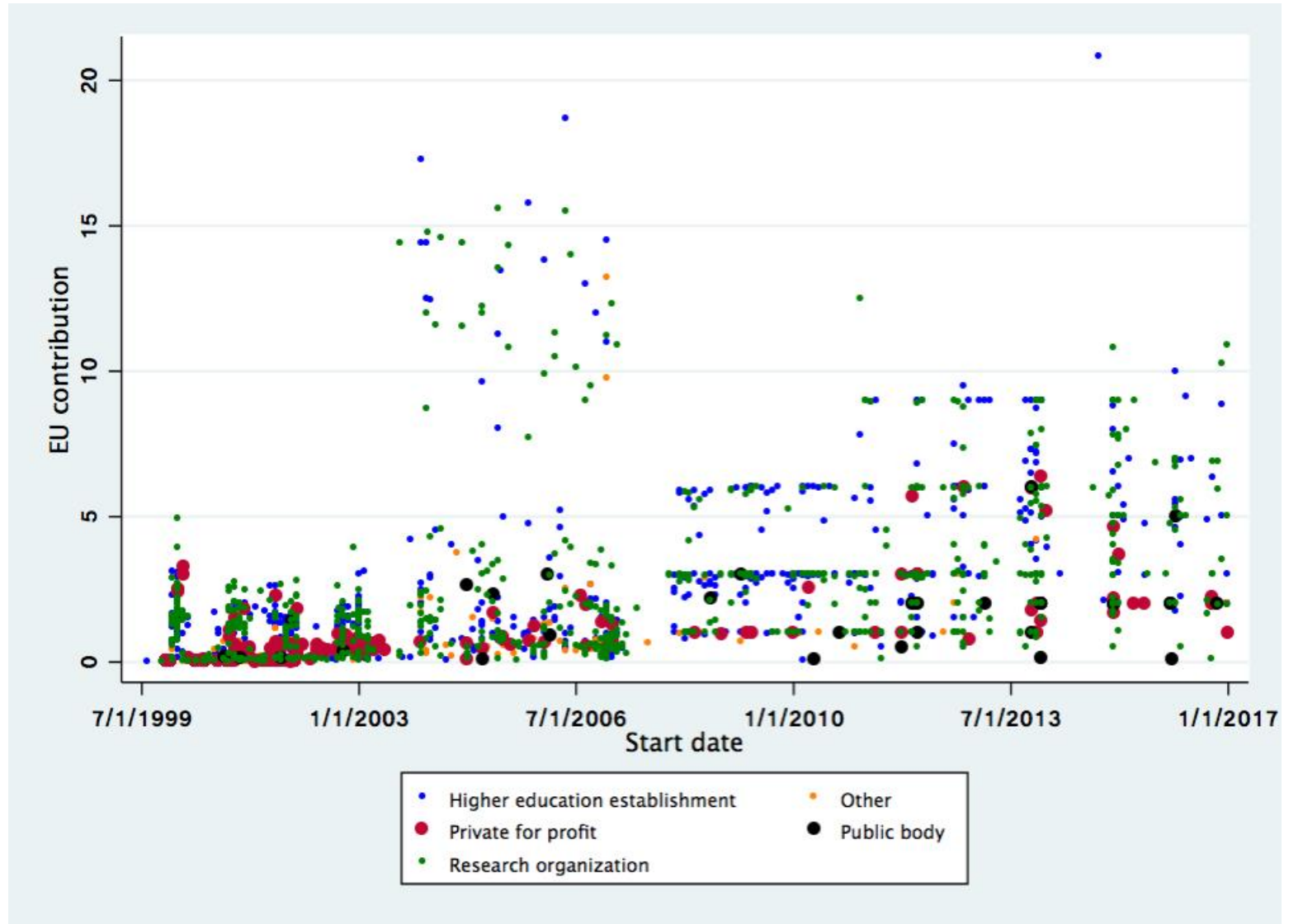




## User communities: who is coordinating projects for fish farmers? (EU contribution in million Euro)

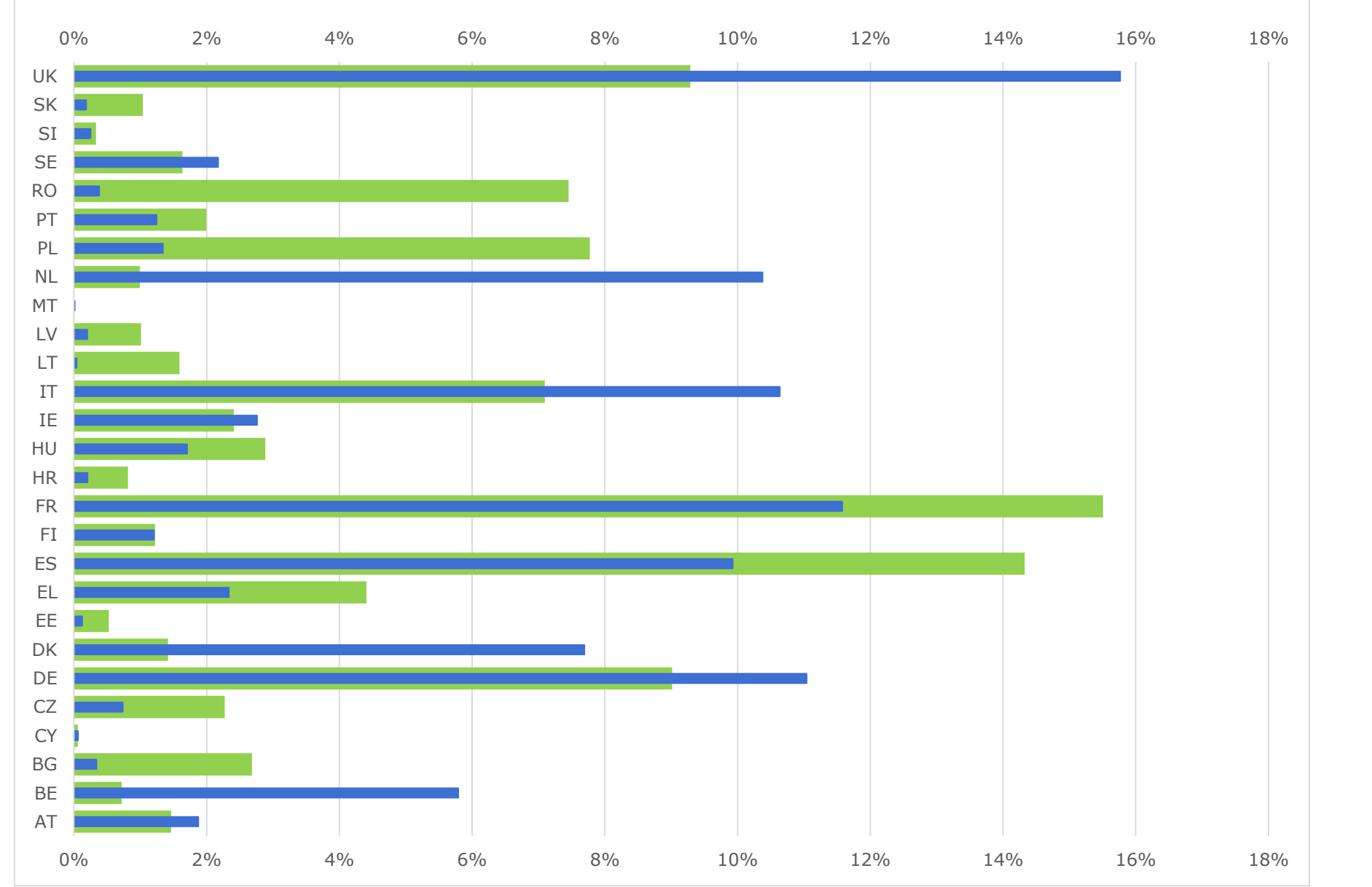


# Project size (EU contribution) and type of coordinating organisation in project for projects starting between July 1999 and January 2017



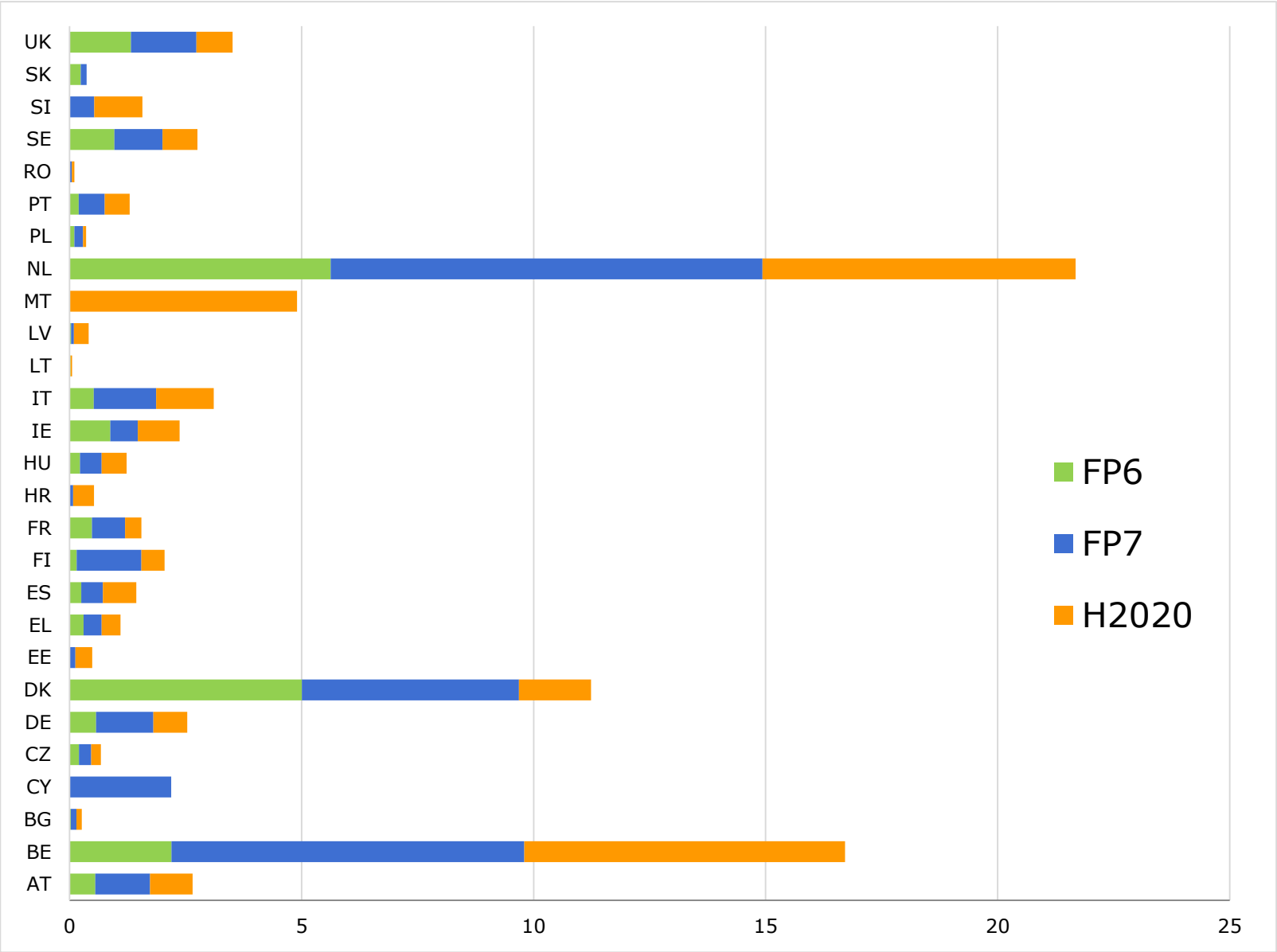
**How has the portfolios changed with respect to the location of project activity?**

**Proportion (%) of EU investment in research for land-based farmers going to different countries (narrow blue bars) and the proportion of the EU agricultural land base of those countries (wide green bars)**

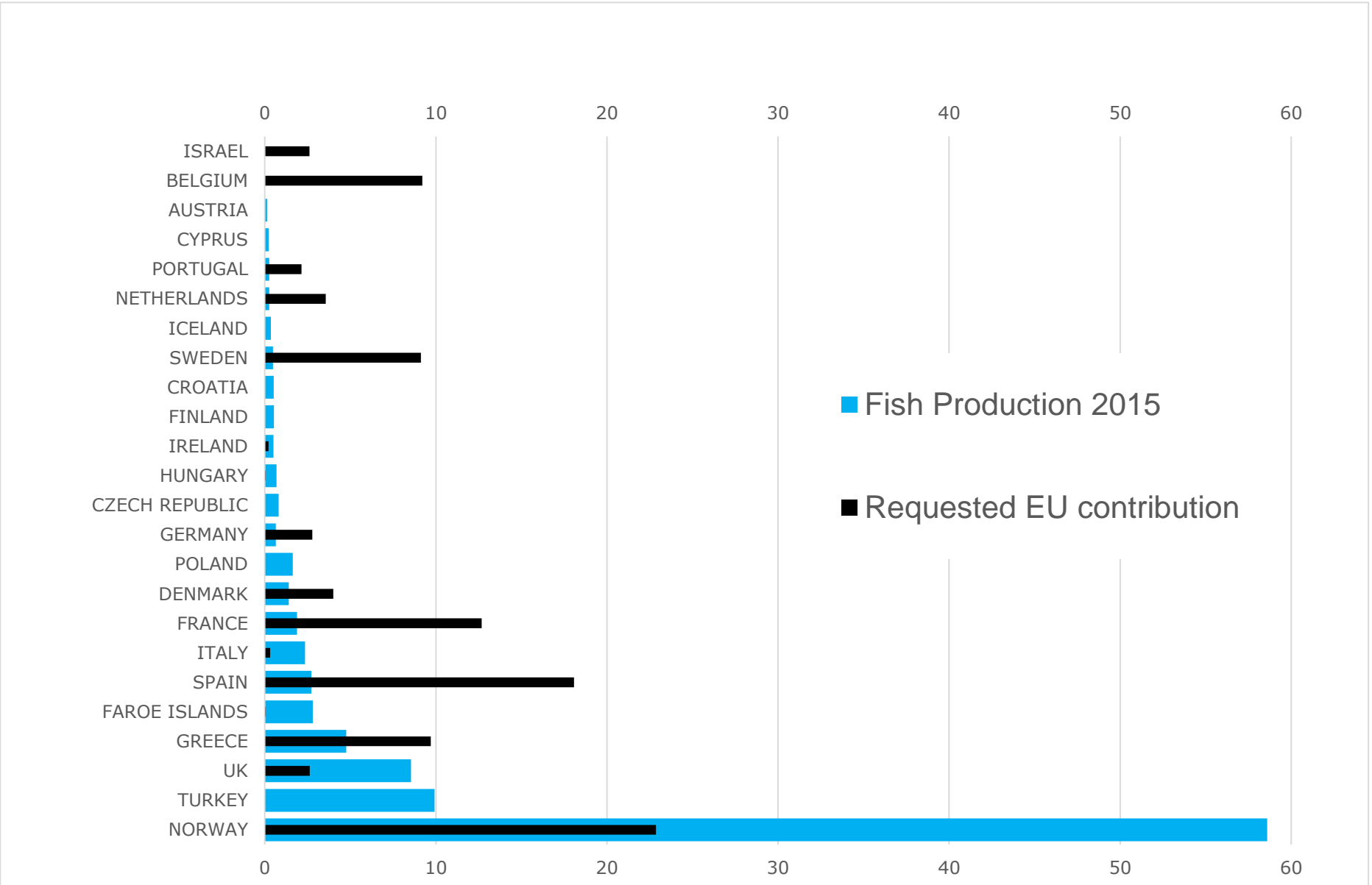




**EU investment in research for land-based farmers in relation to the agricultural land area (Euros/ha)**

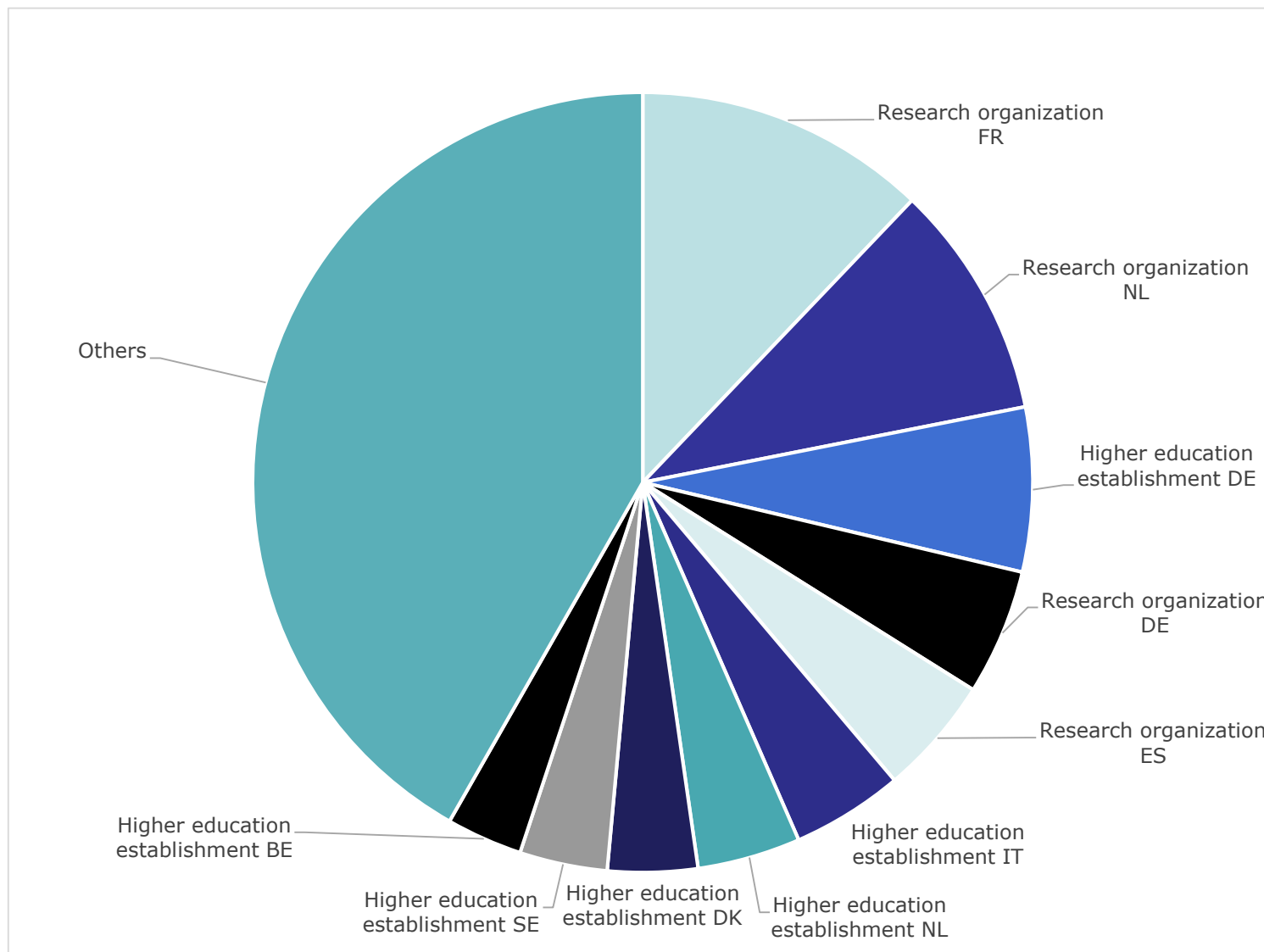


**Proportion (%) of EU investment in research for finned-fish farmers going to different countries (narrow black bars) and the proportion of the total finned fish produced by those countries (wide blue bars)**

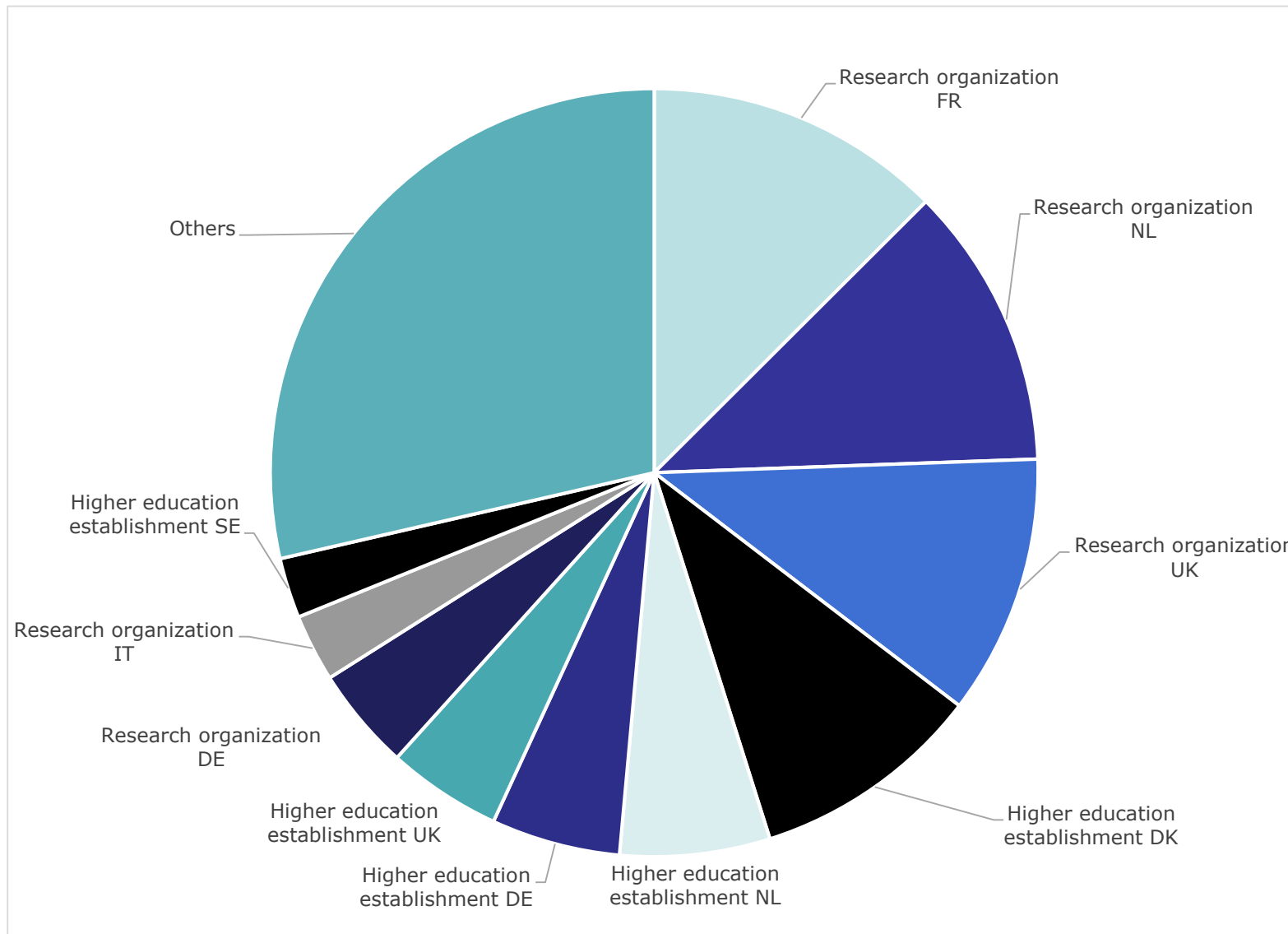


**Is there evidence of concentration or incumbency in the participant base?**

# Distribution of funding in terms of coordinating organisation type and country combinations FP5

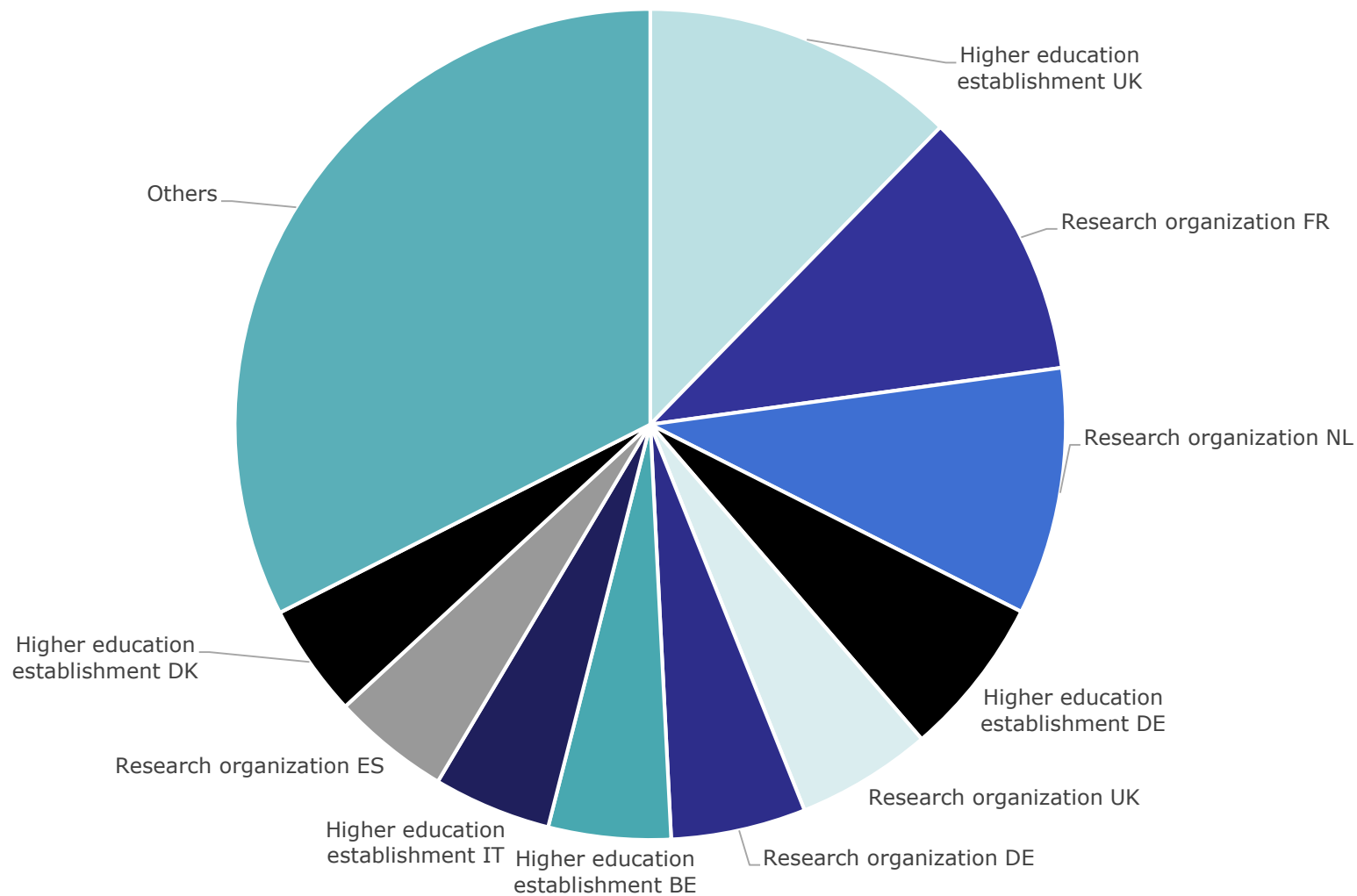


# Distribution of funding in terms of coordinating organisation type and country combinations FP6

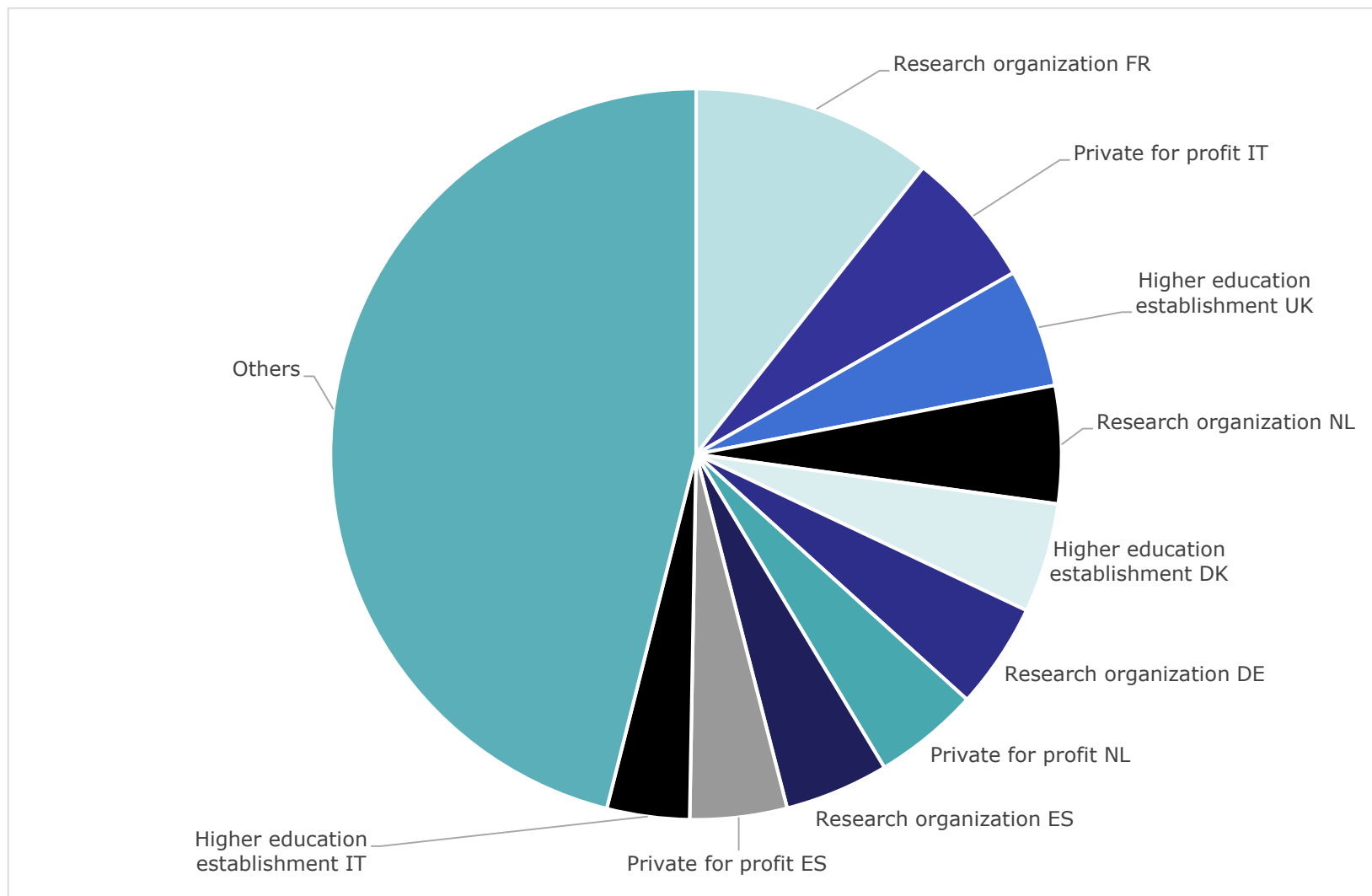




# Distribution of funding in terms of coordinating organisation type and country combinations FP7

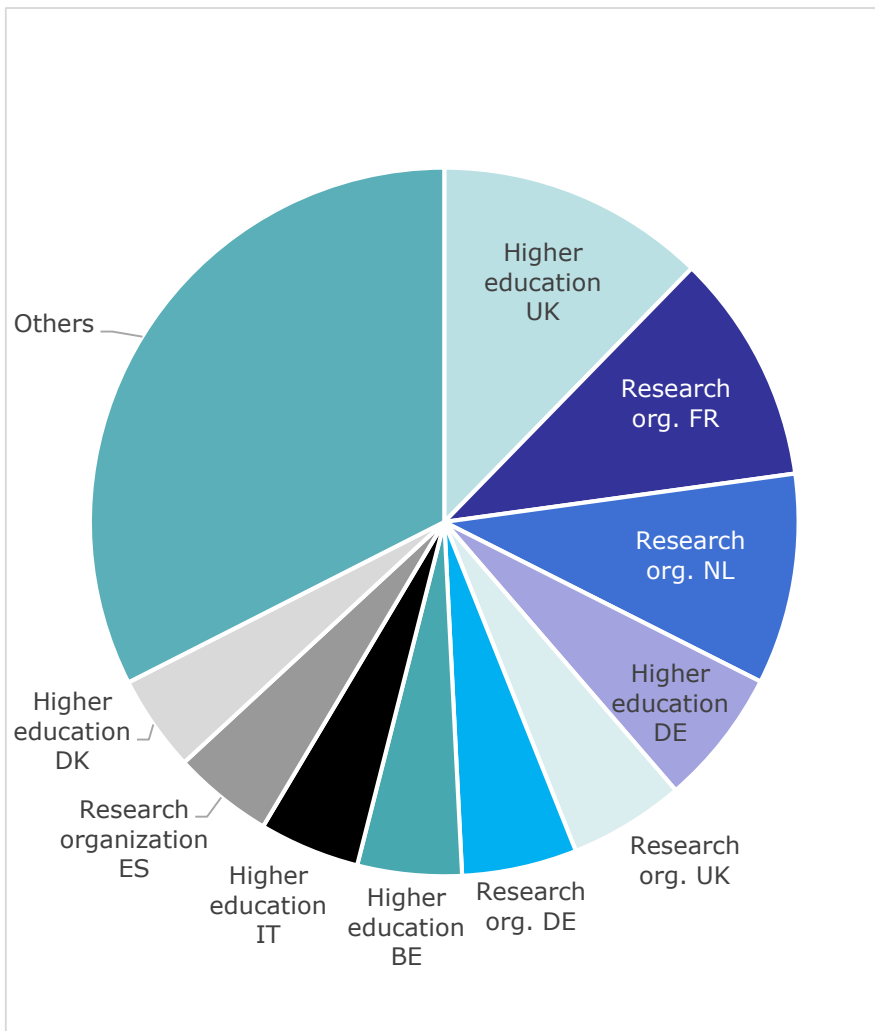


# Distribution of funding in terms of coordinating organisation type and country combinations H2020

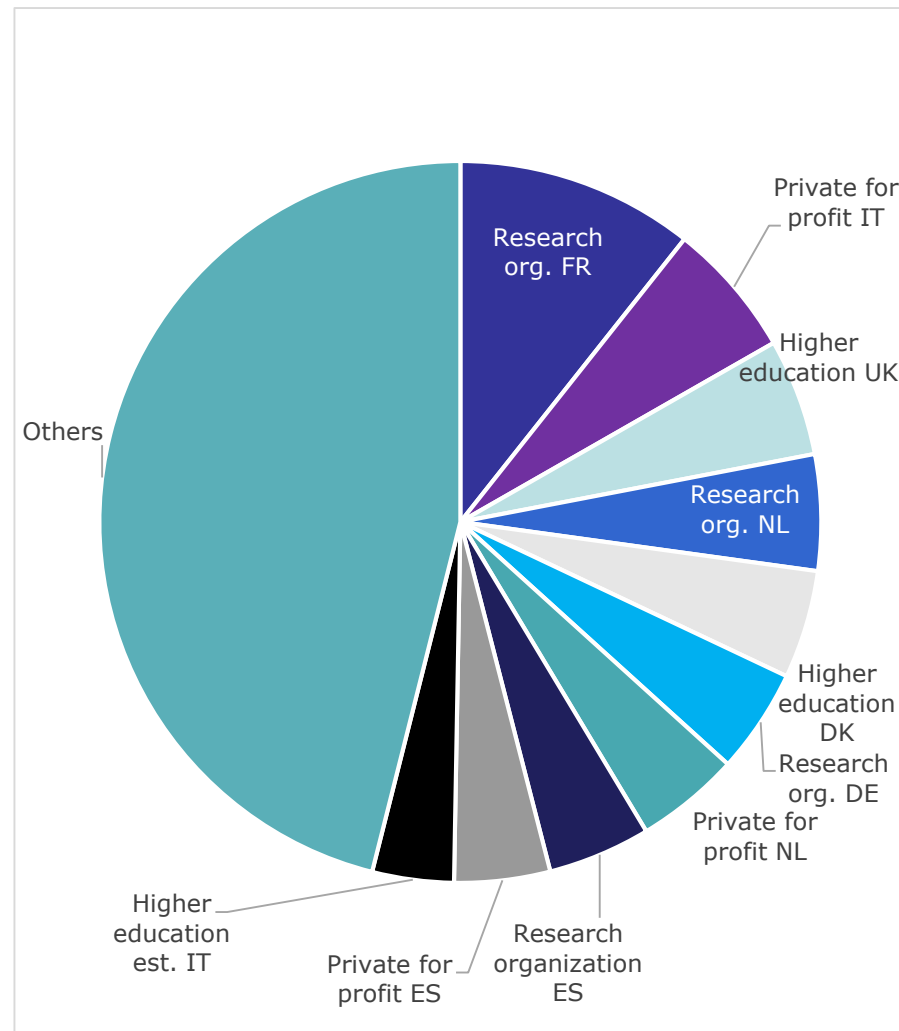


# Distribution of funding for coordination in terms of organisation type and country combinations In FP7 and H2020

**FP7**



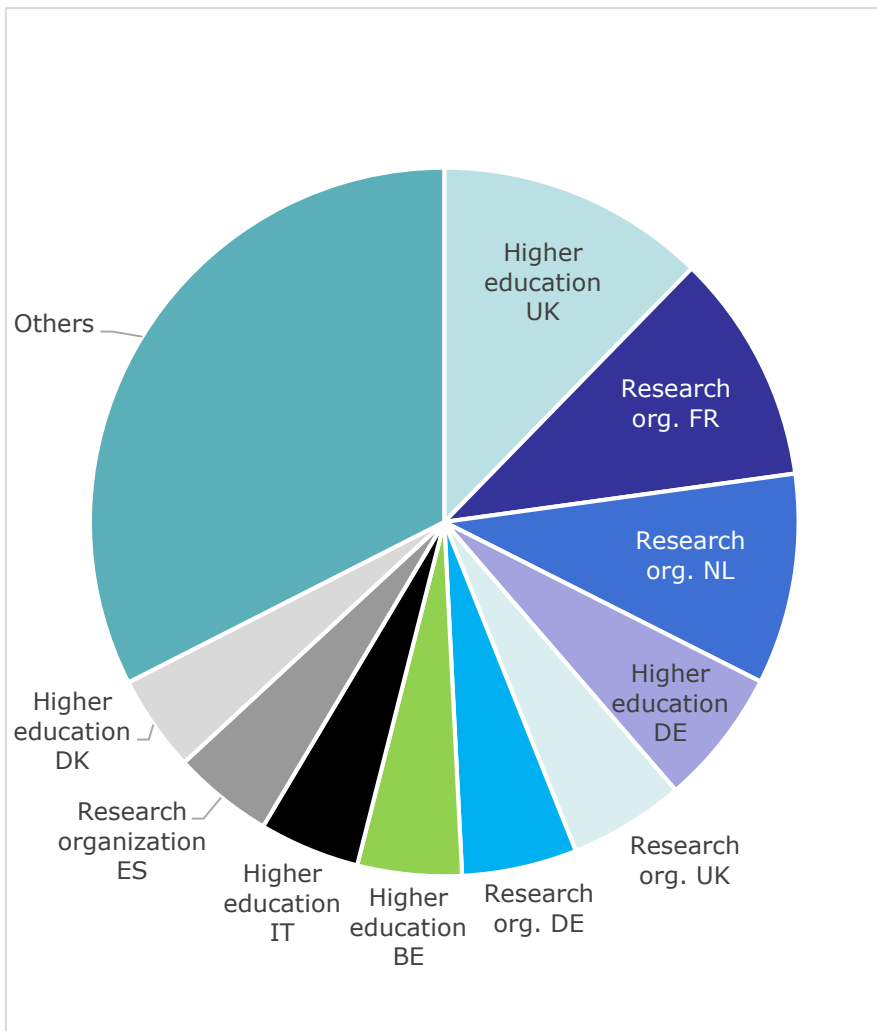
**H2020**



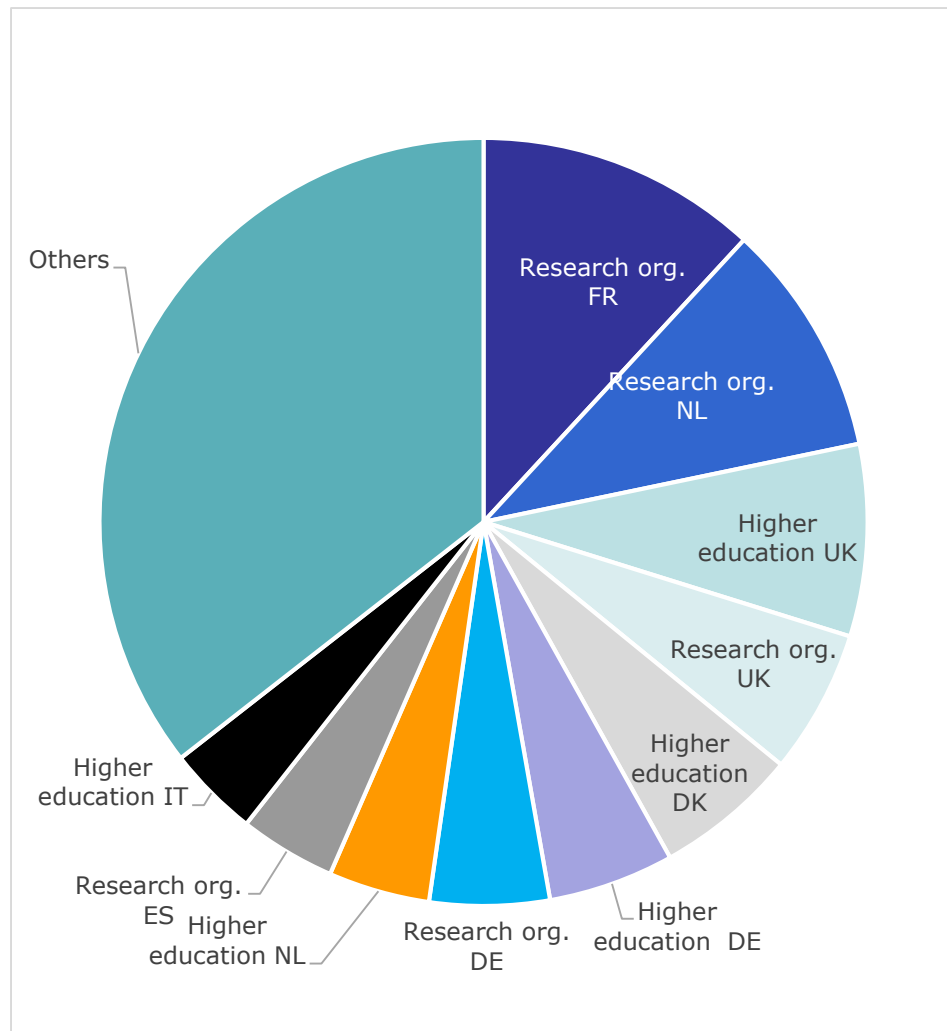
# Distribution of funding coordination in terms of coordinating organisation type and country combinations

## In FP7 and H2020 excl. SME and BBI projects

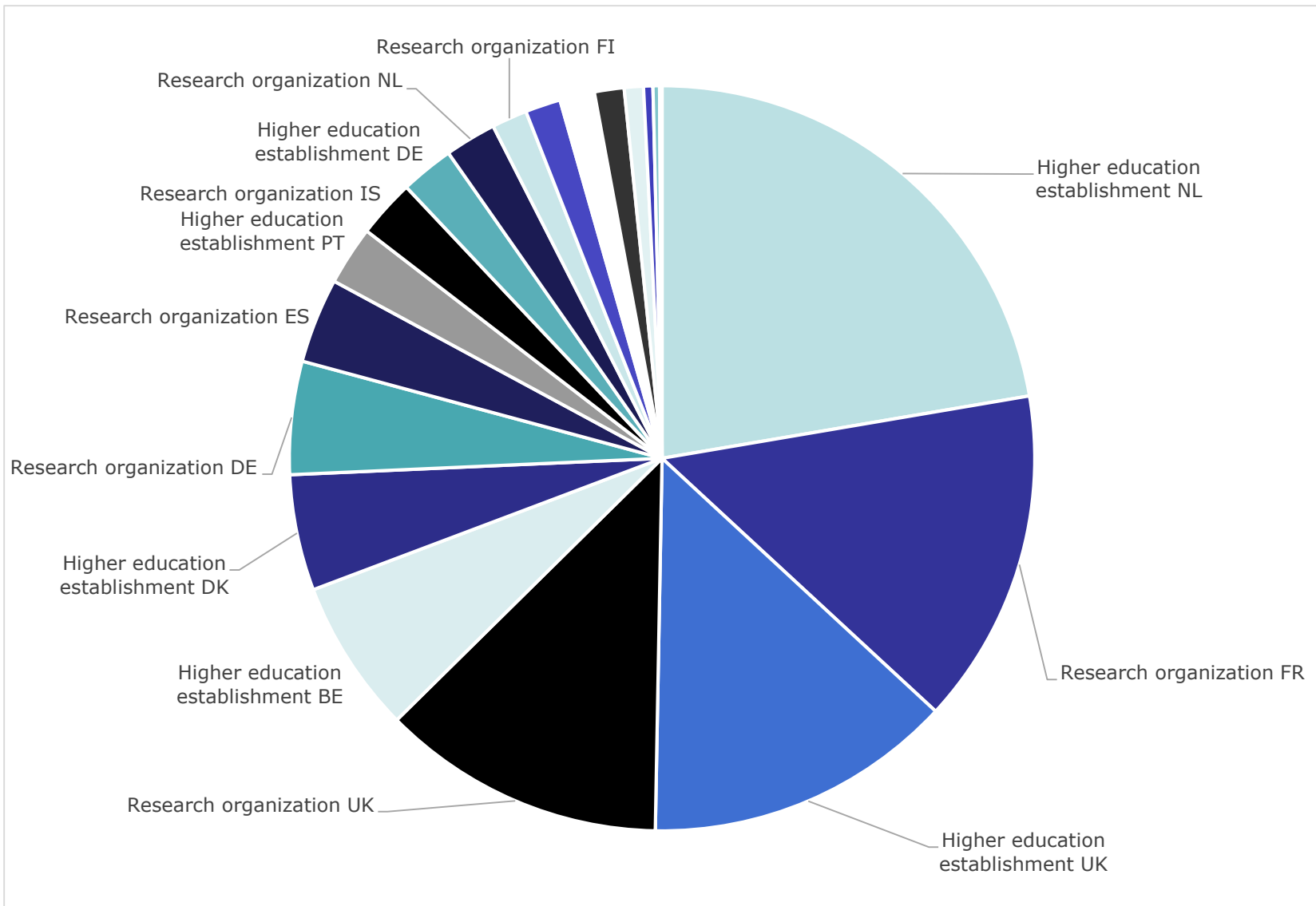
**FP7**



**H2020**

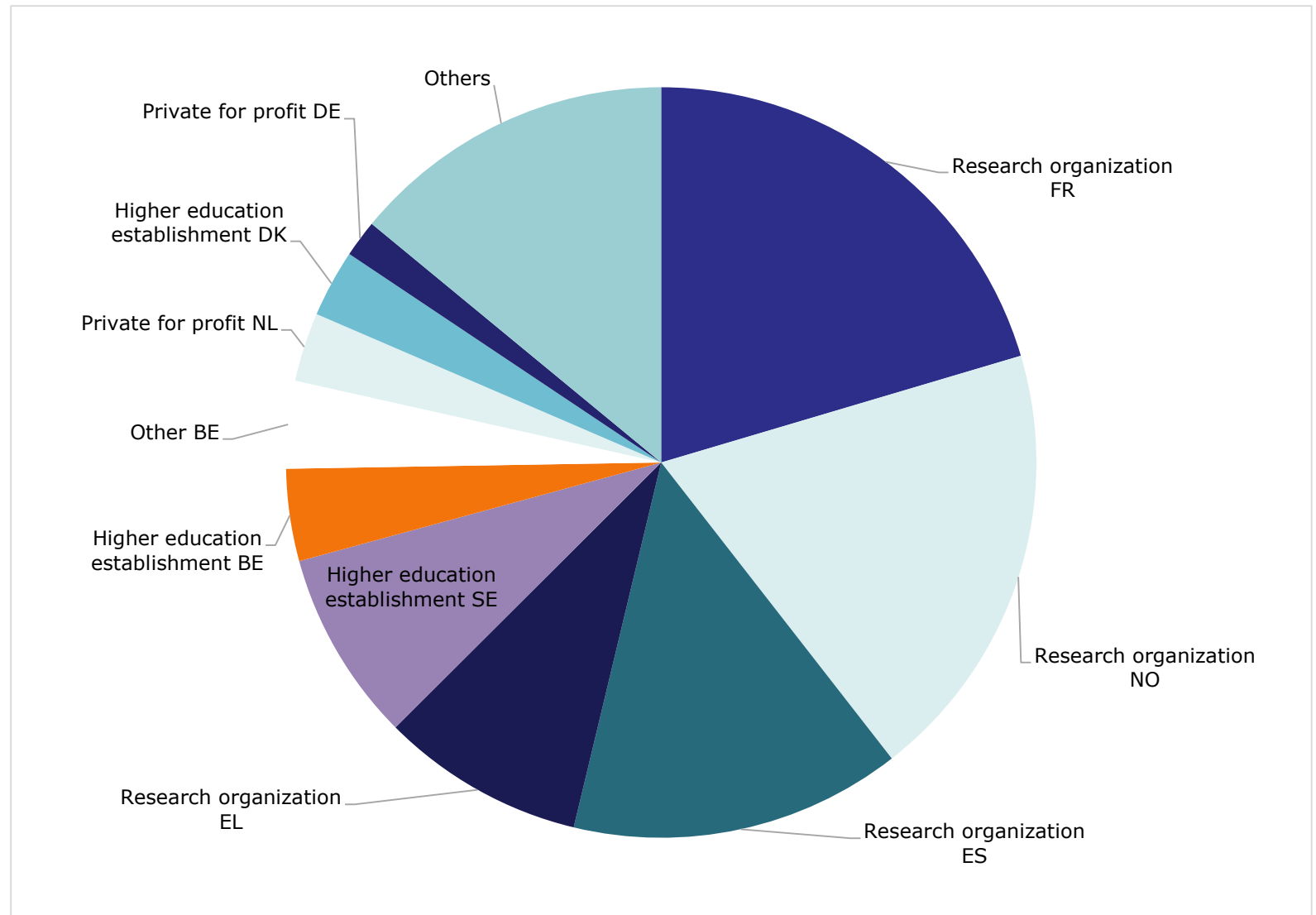


# Distribution of project funding in terms of coordination in relation to user communities – plant breeders





# Distribution of project funding in terms of coordination in relation to user communities – fish farmers



# **Meeting Societal Challenge 2**

## **The views from impact communities**



## Response rate – Low for individual case studies

| Impact communities                        | No of experts invited | First round     |
|---|-----------------------|-----------------|
|   |                       | No of responses |
| Dairy farmers                             | 14                    | 4               |
| Cereal and grain legume crop breeders     | 11                    | 5               |
| Fish breeders (aquaculture)               | 10                    | 3               |
| Lignocellulose processors                 | 10                    | 3               |
| Bio-based materials and polymers sector   | 10                    | 0               |
| Food industry with respect to food safety | 18                    | 1               |
| Total                                     | 73                    | 16              |

## **Key results**

Impact communities recognise the relevance of SC2

They use some results

But they perceive many obstacles and don't regard the projects as well-tuned to the needs of innovators

Respondents reported many barriers to impact.

# Challenges perceived by impact communities

Dominance of academic organisations that have no interest in impact

Projects are too big

Valley-of-death between research outputs and commercially viable innovation

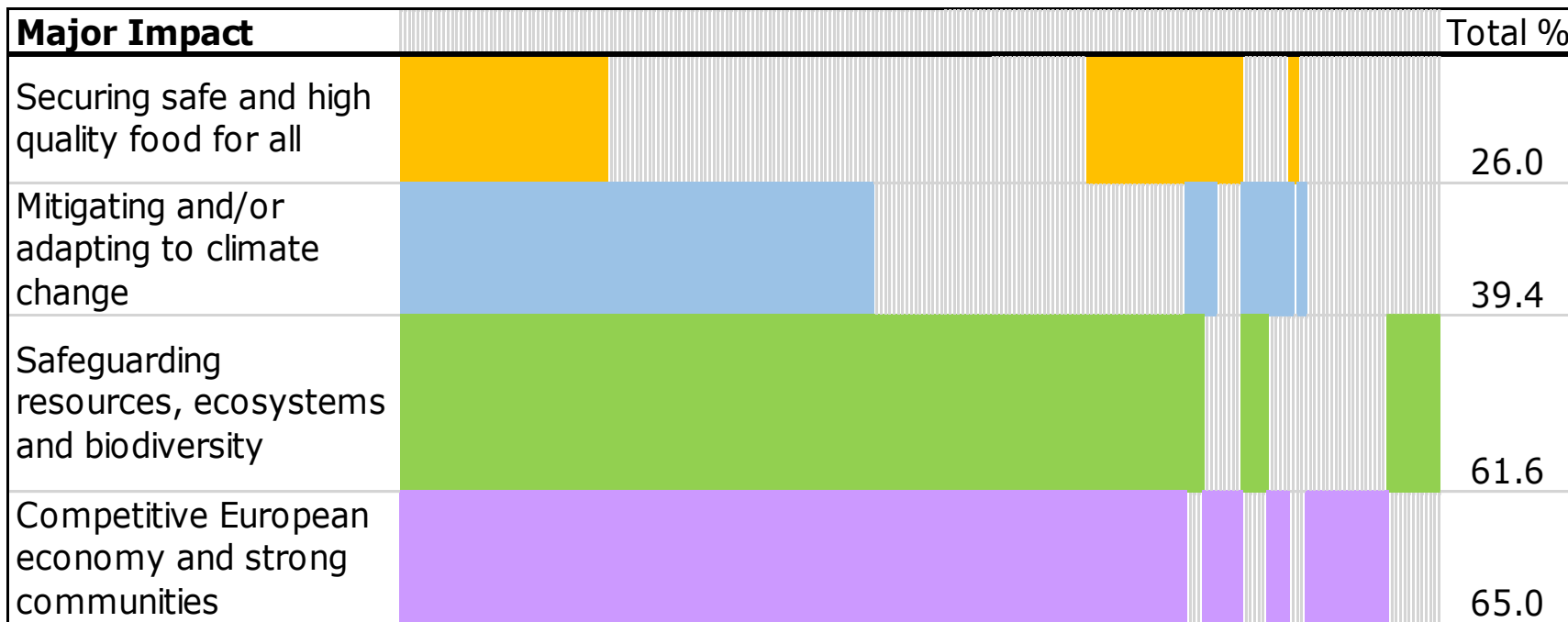
Access to results

Lack of interaction with regulators and regulation



# Contribution to Societal Impacts

**Strong link between improvement of European economy and positive impact on the environment and mitigation of climate**



**Impact cannot be ,remote sensed`**

**Lessons from Framework Programme 5**

**There is evidence of a profound disconnect**

**Mandating SME involvement did not alter leadership**

**The multi-actor approach**

**The system can be disrupted**

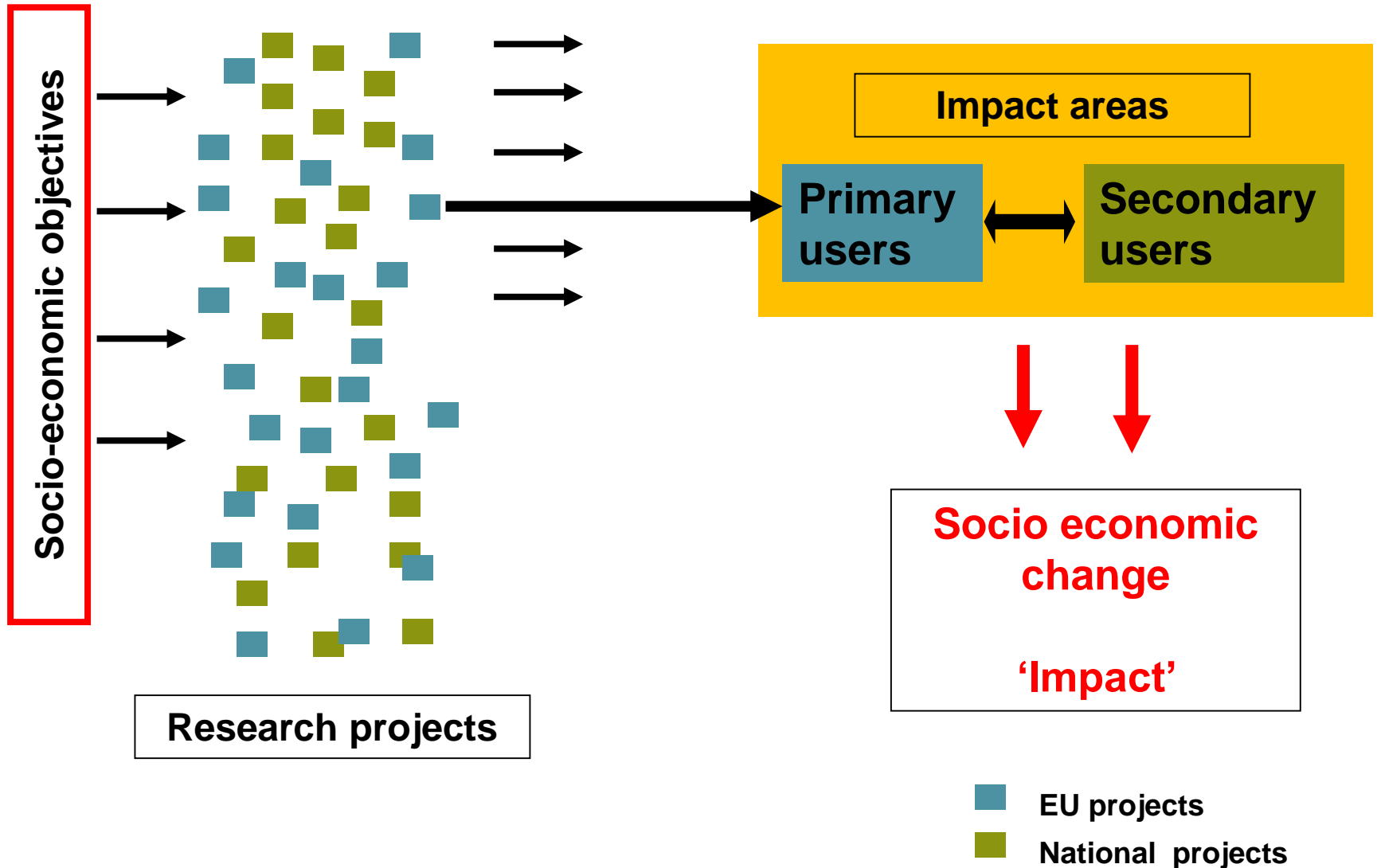
**Must move innovators to the centre of the R&I process**

**This points to I&R actions to complement R&I actions**

**Smaller more focused projects**

**Collectivise support functions, e.g. knowledge interaction**

# Portfolio design





# Acknowledgement

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**Waldemar Knut**

**John Bell**

