



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

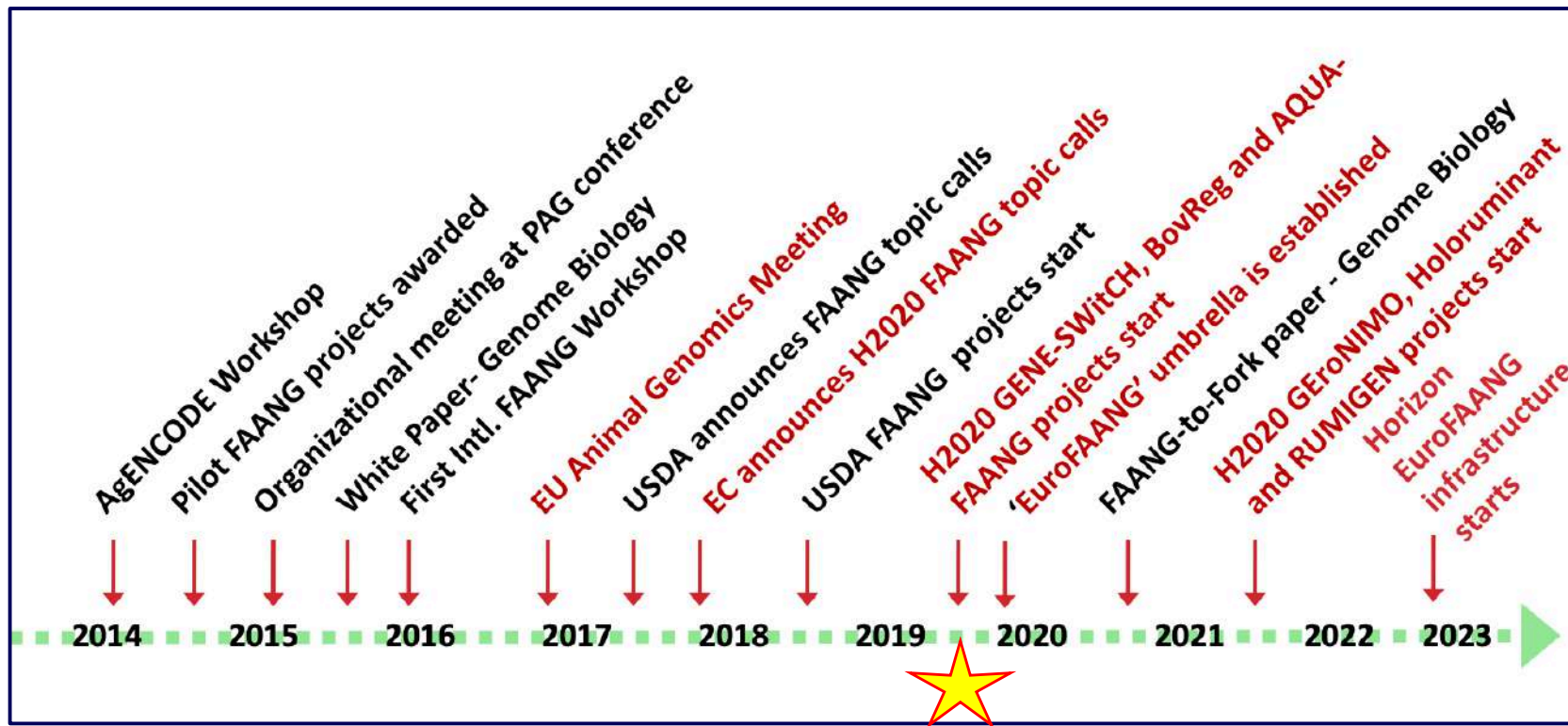


## The EuroFAANG RI Project - An infrastructure for farmed animal genotype to phenotype research in Europe and beyond

*EuroFAANG Research Infrastructure Project Consortium*  
*Klaus Wimmers, Research Institute for Farm Animal Biology (FBN), Dummerstorf*

**BovReg Final Conference, 15th February 2024**

# A little bit of history about “EuroFAANG” initiatives



- COST action FAANG-Europe

- EuroFAANG cluster from H2020 funded projects

# The EuroFAANG H2020 cluster of individually funded projects



### Research aims

- ✓ Increase efficiency through precision breeding
- ✓ Increase disease resistance
- ✓ Minimise environmental impact

### Joint strategies

- ✓ Communication & Dissemination
- ✓ Training
- ✓ Research Methodology



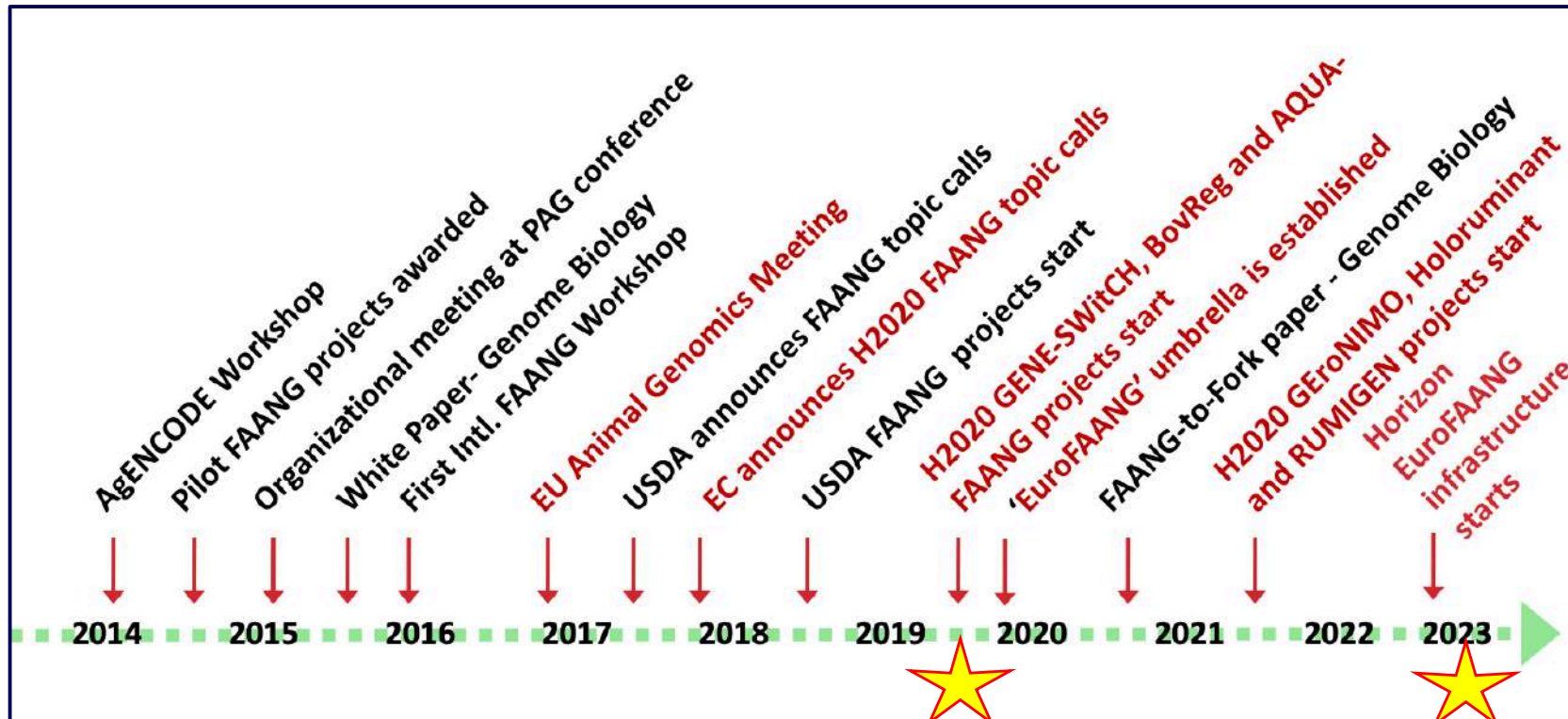
Recently joined



More recently funded



# A little bit of history about “EuroFAANG” initiatives



- COST action FAANG-Europe

- EuroFAANG cluster from H2020 funded projects

- the new EuroFAANG RI project



# EuroFAANG – A European infrastructure for farmed animal genotype to phenotype research

## Horizon Europe infrastructure concept development project

Funded via Horizon Europe INFRA-DEV funding stream - **Developing, consolidating and optimising the European research infrastructures landscape, maintaining global leadership**

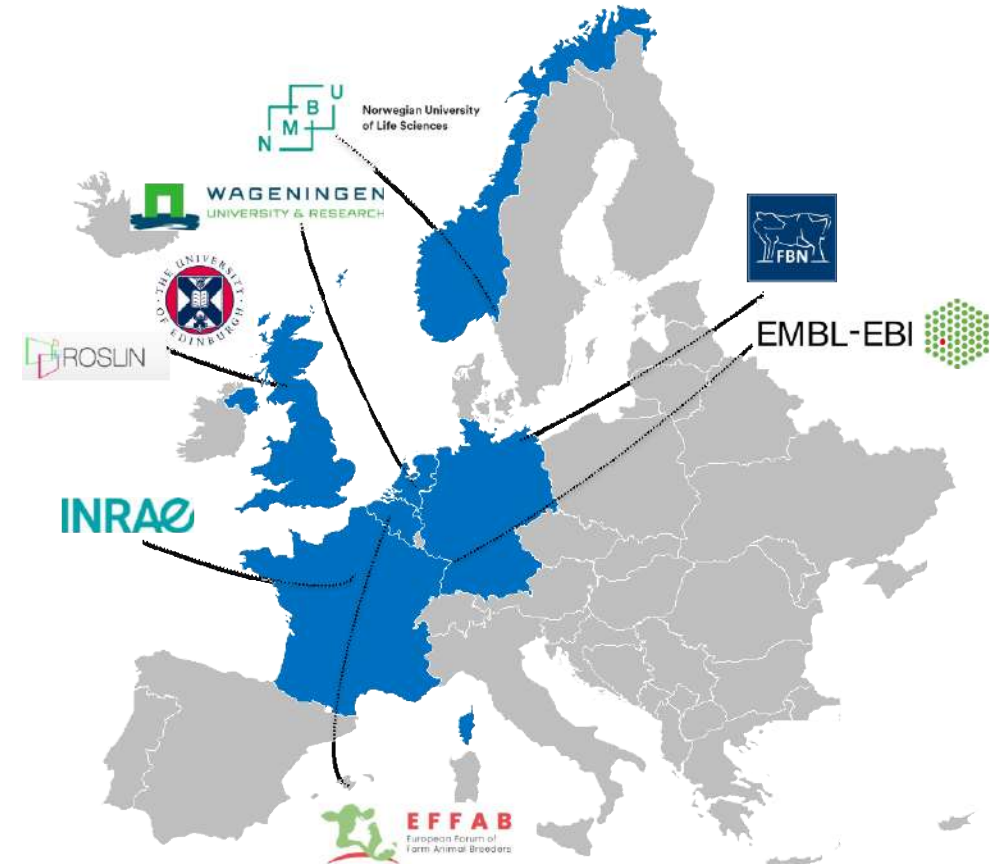
Run time: 2023 – 2025

Total funding: €2.86 million

Coordinator: FBN, Germany

Co-Coordinator: UEDIN, United Kingdom

**Aim: Establish the concept for an infrastructure to facilitate research and innovation for genotype to phenotype research in farmed animals to achieve sustainable, efficient and socially accepted farmed animal production in Europe**



# The EuroFAANG Research Infrastructure project:

- ▶ **Does not provide infrastructure access or services, it is a concept development project.**
- ▶ Aims to bring together infrastructures and resources in farmed animal research to provide an attractive package to be eligible as a ESFRI project for consideration on the roadmap with a sustainable perspective.
- ▶ Has started a large number of activities - surveys, workshops, stakeholder meetings, lobbying, global networking, outreach to existing RIs (including EU framework and ESFRI RIs), ....
- ▶ Needs **comprehensive collaboration within the entire farmed animal research community** and animal breeding sector to moving forward from concept development to project preparation.
- ▶ Will provide **multiple opportunities to associate with activities** and be part of a future EuroFAANG ESFRI proposal.

# The ESFRI environment 'Health and Food'

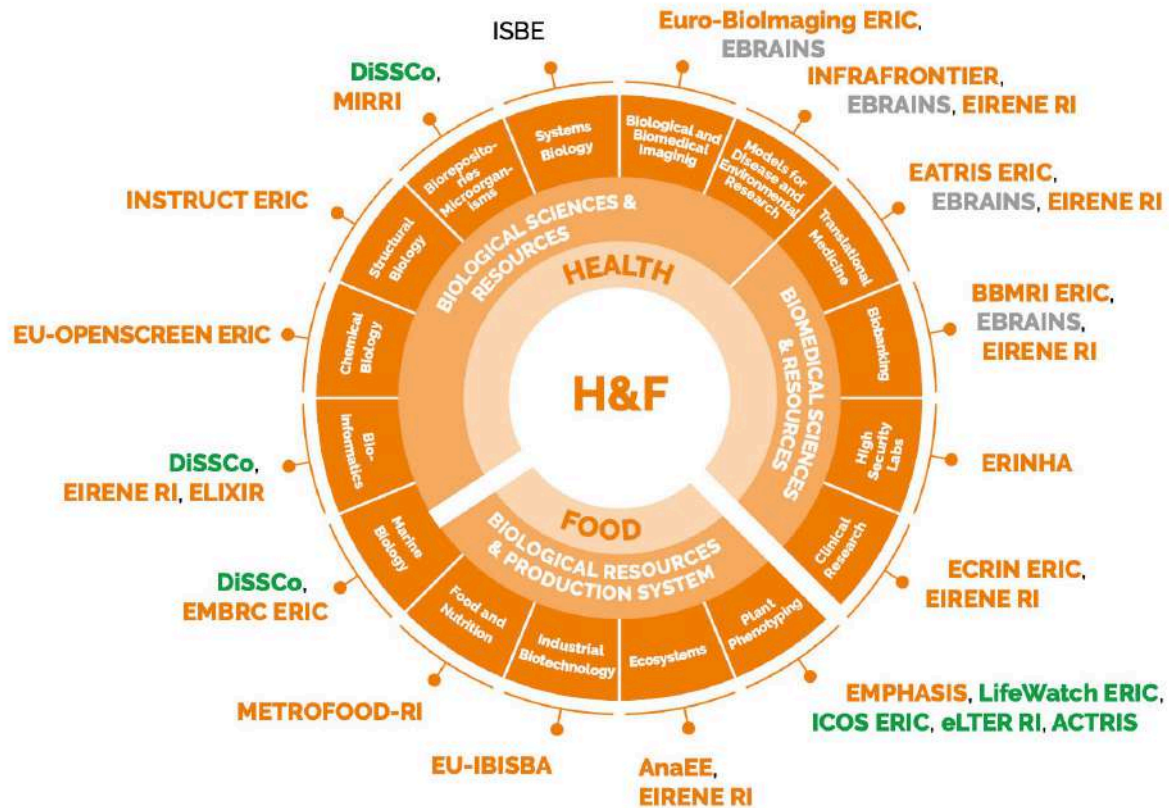


FIGURE 1.  
The Landscape of the Health & Food domain

16 infrastructures : 12 established 'landmarks'  
4 'projects'

Only 5 in the sub-domains  
'biological resources and production systems'

- ✓ EMBRC for marine biological resources
- ✓ MetroFOOD for metrology in food & nutrition
- ✓ IBISBA for synthetic biology
- ✓ AnaEE for managed and unmanaged ecosystems
- ✓ EMPHASIS for plant phenotyping

**NONE on DOMESTIC/FARMED ANIMALS !**

But 3 in the field of biological resources :  
 One on animal models : INFRAFRONTIER  
 One on human biobanks : BBMRI  
 One on microbial resources : MIRRI



# The ESFRI environment ‘Health and Food’

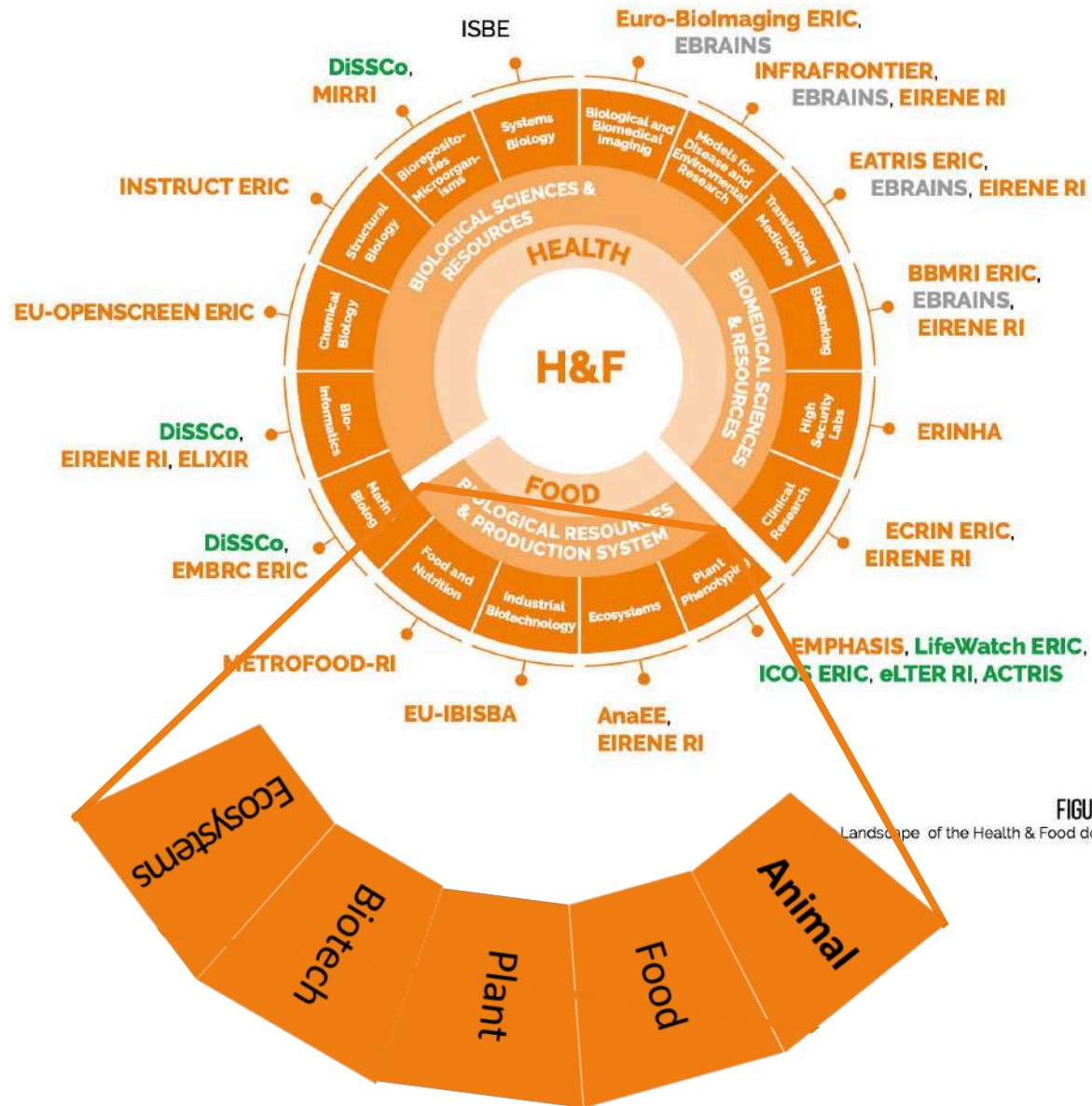


FIGURE 1. Landscape of the Health & Food domain

## Strategy Report on Research Infrastructures RoadMap 2021 – Landscape of ‘Health and Food’

The remit of the ESFRI ‘Health and Food’ research infrastructures:

*“generate readiness to meet the current challenges and demands in the Agri-Food sector in Europe.”*

Outcome of the 2021 Roadmap landscape review:

*“Concerted effort to continue bringing together national facilities at the pan-European level in the field of **animal genetic resources, phenotyping and breeding, animal health** is needed to contribute to address the challenge to produce safe, healthy and sustainable food.”*



# The EuroFAANG Research Infrastructure project has four main objectives:

1. Creation of a common data structure and data access - through supporting the FAANG Data portal and establishing an Elixir community for 'Domestic animal genomes and phenomes'.
2. Development, of a European framework for curation and biobanking of *in vitro* cellular models.
3. Sharing and expanding capabilities in new breeding, phenotyping, and genomic technologies.
4. Connecting with existing projects and infrastructures to consolidate G2P research in farmed animals across Europe and globally.



Phenotyping



Data



AgBioData

Toward enhanced genomics, genetics, and breeding research outcomes through standardization of practices and protocols across agricultural databases



## Kick-Off Meeting of the EuroFAANG Research Infrastructure Project

27-28th February 2023

Berlin, hosted by FBN



## INRAE Summer School for Innovative Cellular Models for Animal Science

11-15<sup>th</sup> September 2023

Jouy-en-Josas, hosted by INRAE

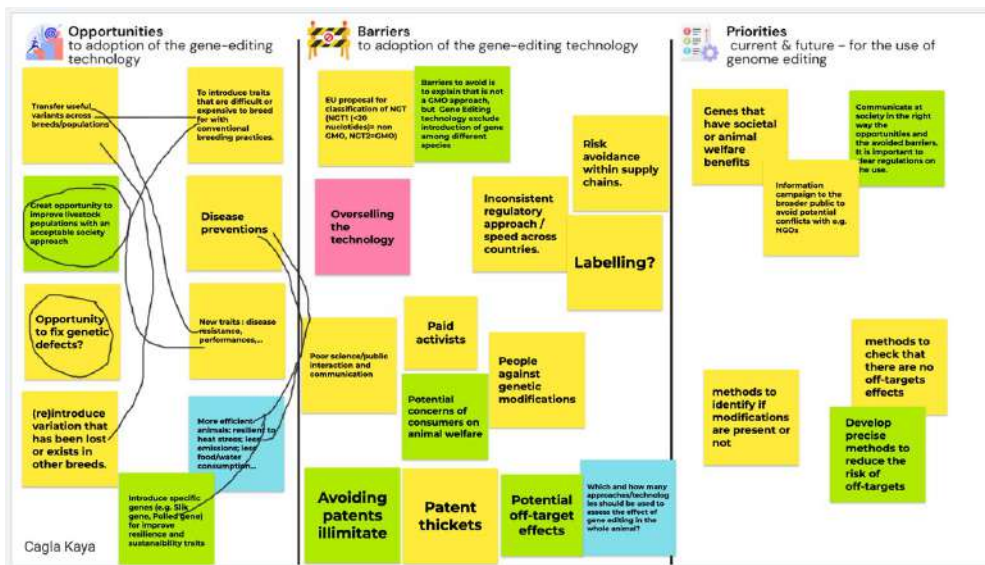
36 participants, from institutes from across Europe



- EuroFAANG RI Think-Tank on Genome Editing in Europe

Virtual Meeting, October 5<sup>th</sup> 2023, EFFAB and UEDIN

- 63 participants in total, 43 joined on the 5<sup>th</sup>
  - 4 groups of approximately 10 participants
  - 3 discussion points: barriers, opportunities and priorities
- positive response by participants, very productive discussion



- EuroFAANG RI Survey on Genome Editing

Preliminary map of labs using GE in-vitro and in-vivo

**Workshop to define Research and Innovation needs in Animal Genetics and Reproduction**

- Horizon EU 2025-27 and next EU Research Framework by Nikos Zampoukas, DG RTD, European Commission (15m)
- FABRE TP Research Agenda 2025-2030 (15m)
- The EuroFAANG project: Research infrastructure presentation: how research and breeding companies can benefit (15m)
- World café (2h)
- Conclusions (15m)

**ANNUAL GENERAL MEETING**  
 SHAPING THE FUTURE: Sustainable Animal Breeding in European Farming  
 30-31 MAY 2023  
 University Foundation  
 Rue Egmont 11  
 Brussels

**EFFAB** European Forum of Farm Animal Breeders  
**FABRE-TP** Farm Animal Breeding & Reproduction Technology Platform

- Stakeholder Workshop at FABRE-TP AGM

EFFAB, INRAE and UEDIN

- World Café – two discussion groups of ~15 participants
- 1. Biobanking
  - 2. Genome Editing





- **EuroFAANG Workshop at the EAAP Meeting, Lyon, France, (WP8), 31<sup>st</sup> August 2023**

Key panel discussion on how the animal breeding sector can use the EuroFAANG RI Project and EuroFAANG projects knowledge

- **EuroFAANG RI Survey on BioBanking**  
31 answers from 14 countries; capacity building for stem cell and organoid research requested
- **Think tank on Biobanking/in-vitro cell models**
- **EuroFAANG RI Survey on technological advancement**
- **Data management plan**
- **Guide for Transnational Access**
- **Webpage, data portal**

## EuroFAANG RI Activities in 2024

**EuroFAANG Global Networking Event during the FAANG workshop at the The Plant and Animal Genomes Conference, San Diego, California, 16<sup>th</sup> January**

**BovReg Final Conference, Brussels, 14<sup>th</sup> - 15<sup>th</sup> February**

**EuroFAANG RI 1<sup>st</sup> Annual Meeting 16<sup>th</sup> February**

**Quarterly meetings of the think-tanks on genome editing and *in vitro* systems**

**White paper planned on *in vitro* systems for G2P research**

**Focus group meetings to establish an Elixir community for 'Domestic Animal Genomes and Phenomes'**

**Establishing links with phenotyping infrastructures for ESFRI proposal development**

## For the EuroFAANG RI concept to be successful it must:

- Demonstrate the added value of the EuroFAANG RI compared to existing and future research infrastructures.
- Take advantage of on-going funded research projects in the field of animal genomics and phenomics to prepare its user policy and address the expectations of the scientific community, in animal genetics, physiology and health.
- Add value and provide reciprocal benefits at different levels and globally e.g. sharing tools, protocols, and data; developing complementary services; organising joint training; fostering cross domain research connections.

# Summary of the EuroFAANG RI Project

- The EuroFAANG RI project is contributing to addressing the need to bring together national facilities at the pan-European level for animal genetic resources, phenotyping and breeding, and animal health.
- ✓ Filling the gap identified in the infrastructure landscape by the 2021 ESFRI Roadmap.
- The EuroFAANG RI project builds on the six H2020 projects and connects with existing infrastructures for data management and animal agriculture in the European research infrastructure landscape.
- ✓ Leading to a better alignment of the research infrastructure landscape for farmed animal science and frontier G2P research in Europe and globally.

The logo for the European Strategy Forum on Research Infrastructure (ESFRI), consisting of a blue square with the white text "ESFRI" inside.





**Thank you for your attention!**

**The EuroFAANG Research Infrastructure Concept Development is funded by Horizon Europe under Grant agreement no<sup>o</sup>: 101094718**

**BovReg Final Conference in Brussels, 14-15th February 2024, <https://bovreg.eu/>**

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