



# An infrastructure for farmed animal genotype to phenotype research in Europe and beyond

**Emily Clark, The Roslin Institute, University of Edinburgh and Christa  
Kühn, FBN, On Behalf of the EuroFAANG Consortium**

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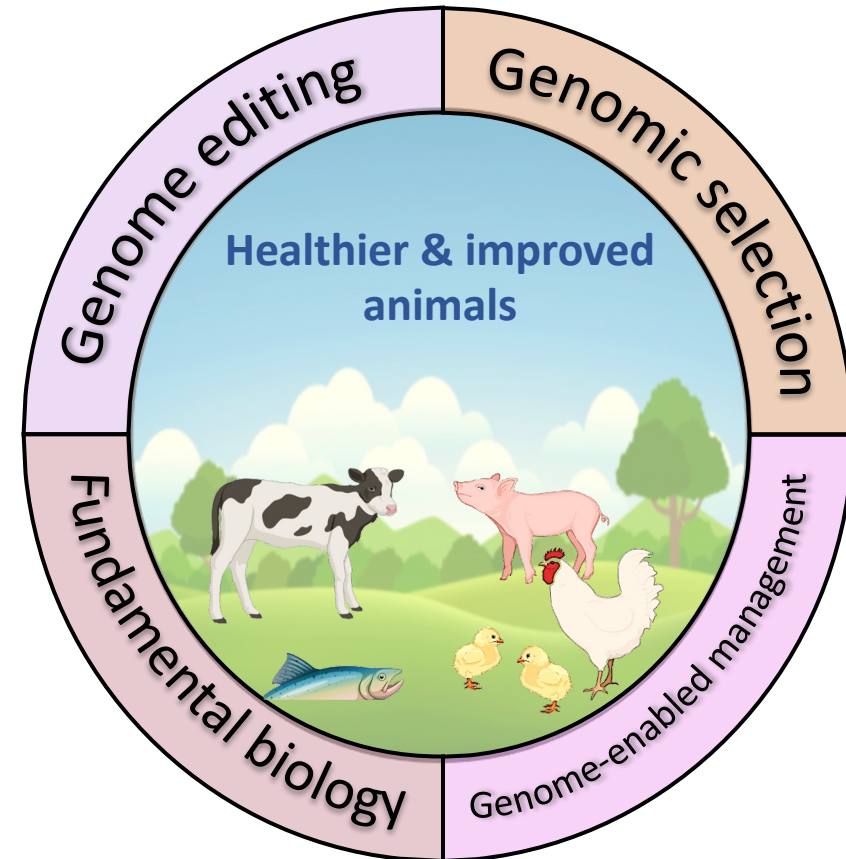


**CODE •  
EFABAR**  
The commitment  
to responsible breeding

# Farmed animal genotype to phenotype research



This is complex to achieve

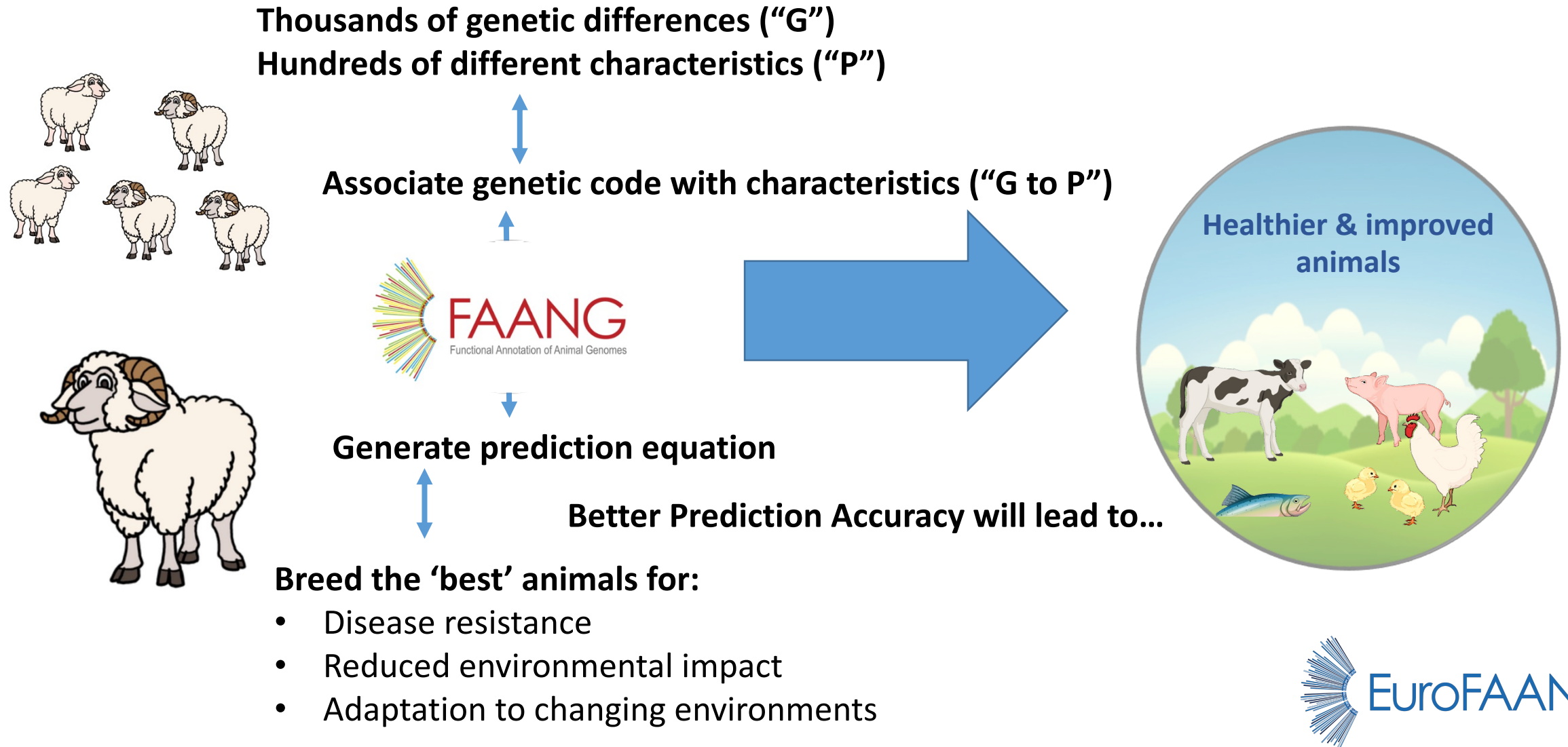


Understanding more about the genetic code of farmed animals can benefit animal breeding and husbandry



**EFFAB**  
European Forum of  
Farm Animal Breeders

Chief among the improvements required in animal breeding and management is the ability to more accurately use an animal's genetic code (**genotype**) to predict its characteristics (**phenotype**)





# EuroFAANG

Accelerating genome to phenome research  
for farmed animals in Europe

Disease resistance

Biological efficiency

Precision breeding

Reduced environmental impact

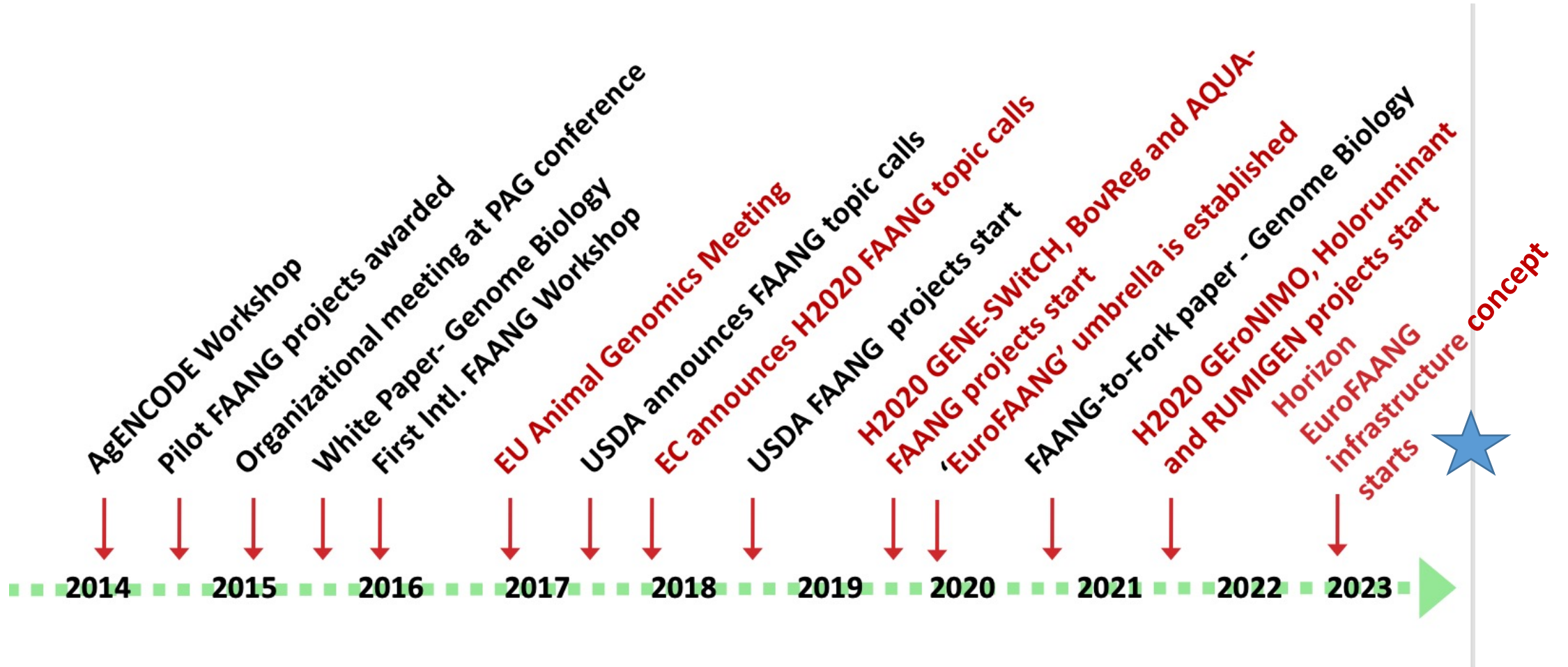
Feeding a growing population

Adaptation to changing environment

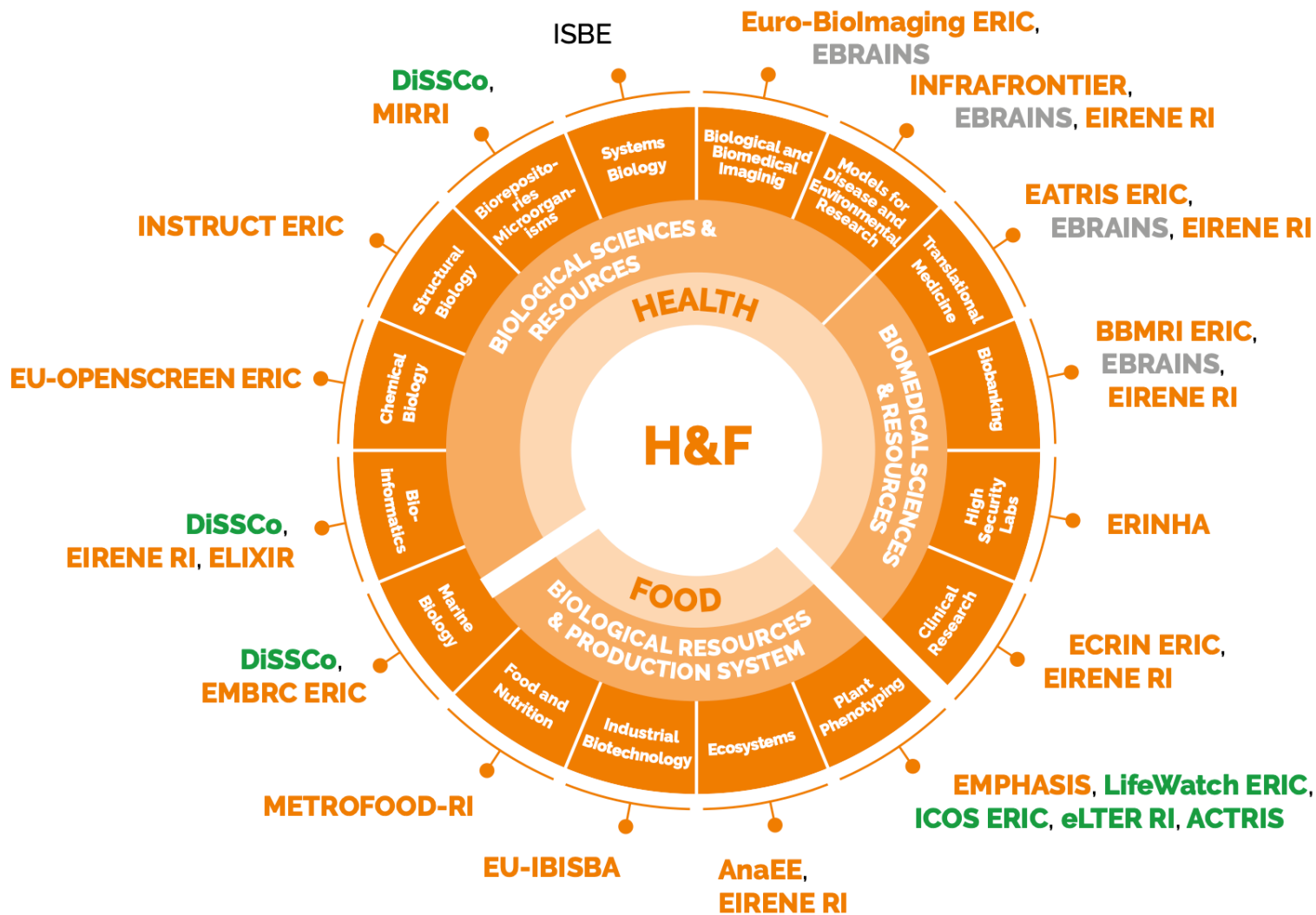


[www.eurofaang.eu](http://www.eurofaang.eu)

# A timeline for EuroFAANG initiatives







The remit of the ESFRI 'Health and Food' research infrastructures is to generate readiness to meet the current challenges and demands in the Agri-Food sector in Europe.

The need to bring together national facilities at the pan-European level in the field of animal genetic resources, phenotyping, breeding, and animal health was identified as a gap.

FIGURE 1.  
The Landscape of the Health & Food domain

European Strategy Forum  
on Research Infrastructures

# EuroFAANG - A European Infrastructure for farmed animal genotype to phenotype research

**Aim: to realise the full potential of genotype to phenotype (G2P) research across species, breeds and populations of farmed animal in Europe.**



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## The EuroFAANG Infrastructure has four main objectives:

1. Creation of a common data structure and data access.
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.



**AgBioData**

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

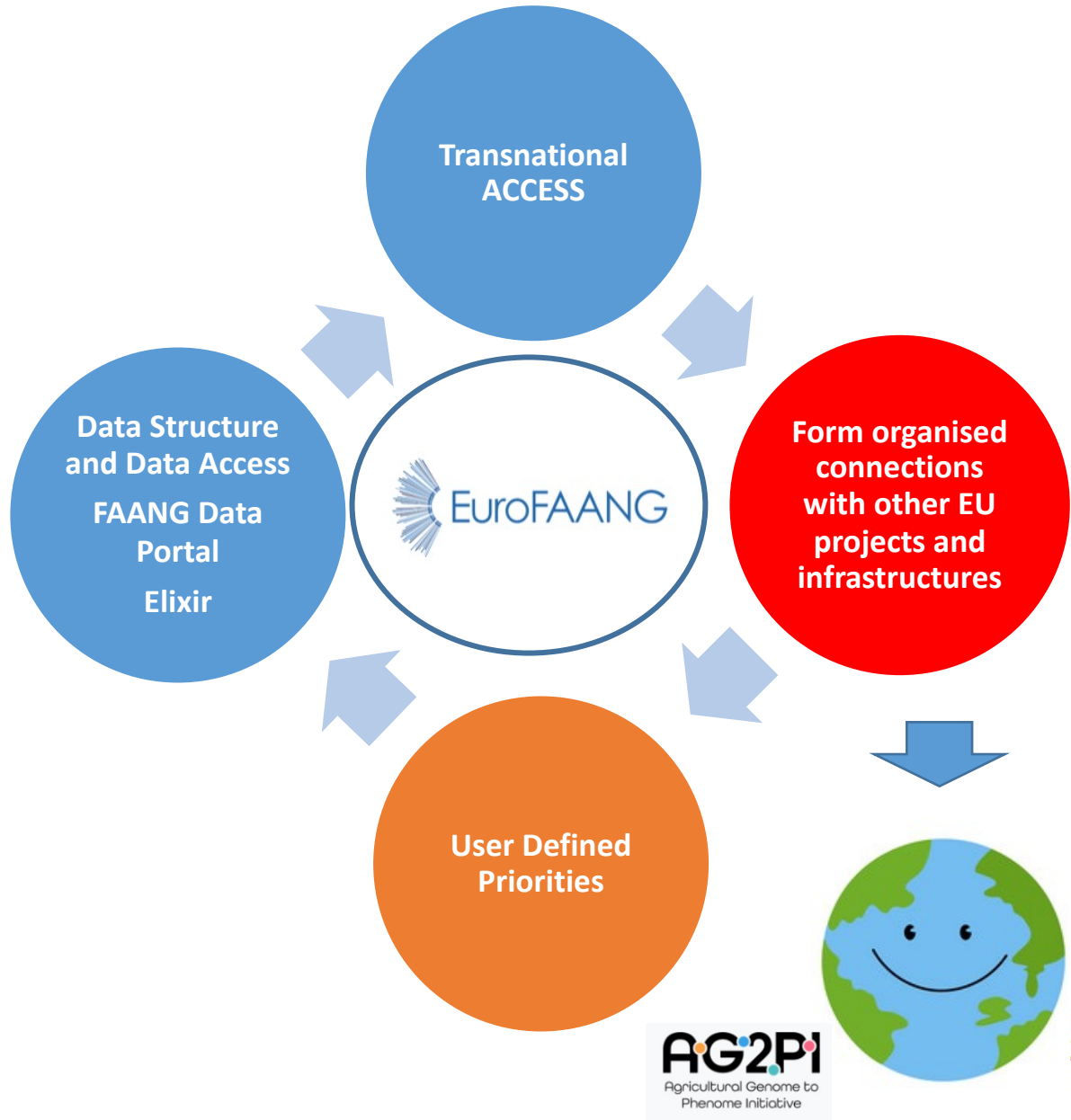


**Phenotyping**

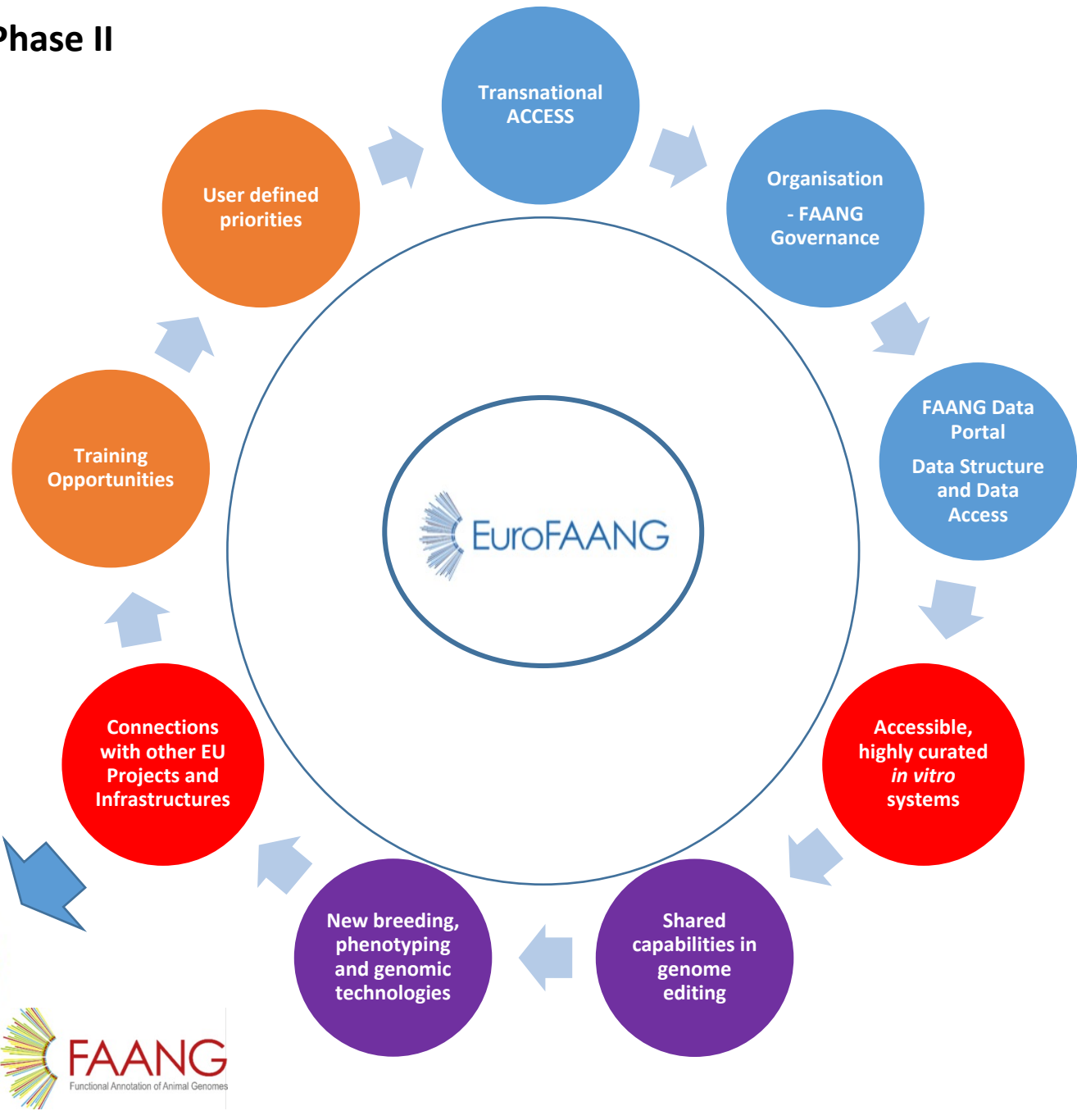
**Data**



# Phase I



# Phase II



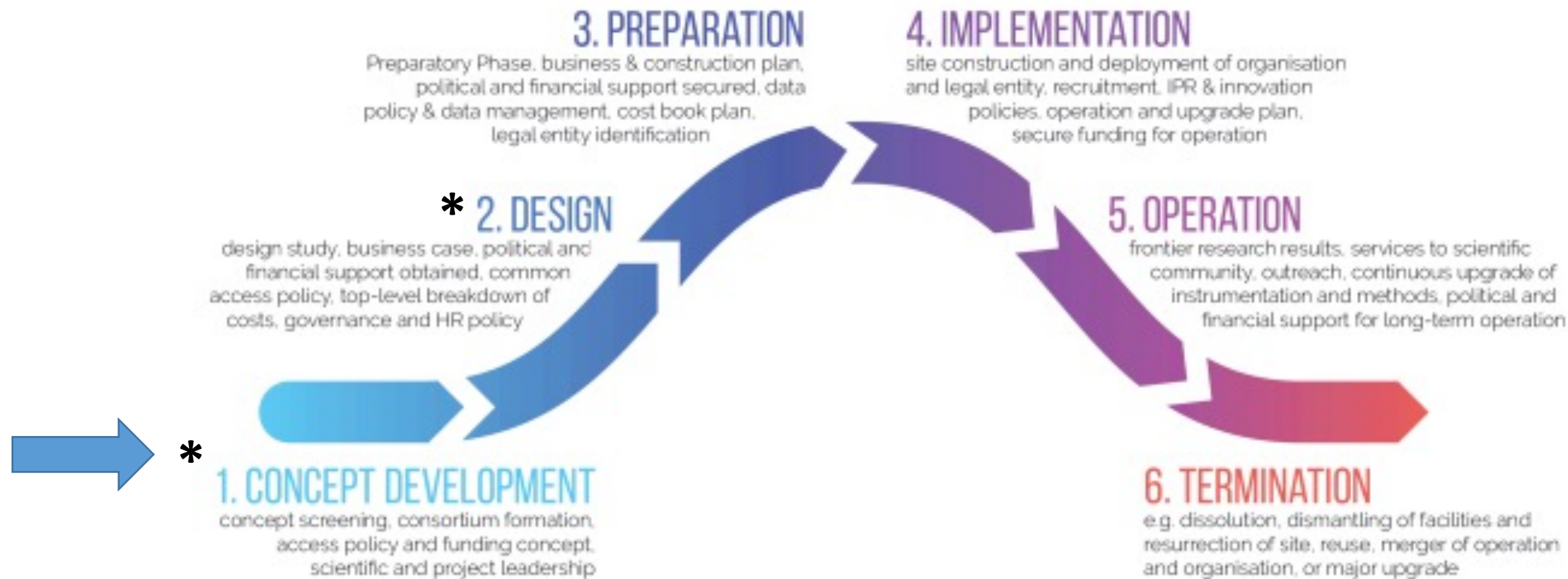
# The concept we are developing for the EuroFAANG infrastructure will aim to underpin G2P research in farmed animals by providing:

1. Access to data, including genomic and phenotype data, and sample metadata.
2. Access to biobanks of reference samples, including organoids and genome edited cell lines.
3. Access to *in vitro* methodologies and tools to bridge G2P knowledge gaps.
4. Access to world leading expertise in G2P research for farmed animals.
5. Access to training, to establish the next generation of researchers in farmed animal science.



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**FIGURE 1: LIFECYCLE APPROACH OF A RESEARCH INFRASTRUCTURE**

**HORIZON-INFRA-2022-DEV-01 Research Infrastructure Concept Development**

# Summary

- The EuroFAANG infrastructure will contribute 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.

ESFRI

- The EuroFAANG infrastructure 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.



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# Planned activities for the coming year

- Kick-Off Meeting in the first quarter of 2023.
  - Hiring of project managers at FBN and INRAE.
  - Virtual kick-off meeting for 'in vitro' models, work package 4.
  - First meeting of the 'think-tank' for genome editing, work package 5.
  - EuroFAANG session at EAAP in Lyon, France, 26<sup>th</sup> August -1<sup>st</sup> September 2023.
- 
- **Expansion of the consortium for the next funding phase** – if you would like to learn more please contact [emily.clark@roslin.ed.ac.uk](mailto:emily.clark@roslin.ed.ac.uk) and [kuehn@fbn-dummerstorf.de](mailto:kuehn@fbn-dummerstorf.de)



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# EuroFAANG

Christa Kühn (FBN), Elisabetta Giuffra (INRAE), Peter Harrison (EMBL-EBI), Martien Groenen (WUR), Ana Granados Chapette (EFFAB), Cagla Kaya (EFFAB), Sigbjorn Lien (NMBU), Michele Tixier-Boichard (INRAE), and the wider EuroFAANG Consortium



<https://eurofaang.eu/>

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## We Are **HIRING**



- Project manager (m/f/d)
- Full-time position, 3 years
- English/German
- Animal Science
- EU Horizon Europe Infrastructure



Location: [www.fbn-dummerstorf.de](https://www.fbn-dummerstorf.de)

Contact: [kuehn@fbn-dummerstorf.de](mailto:kuehn@fbn-dummerstorf.de)