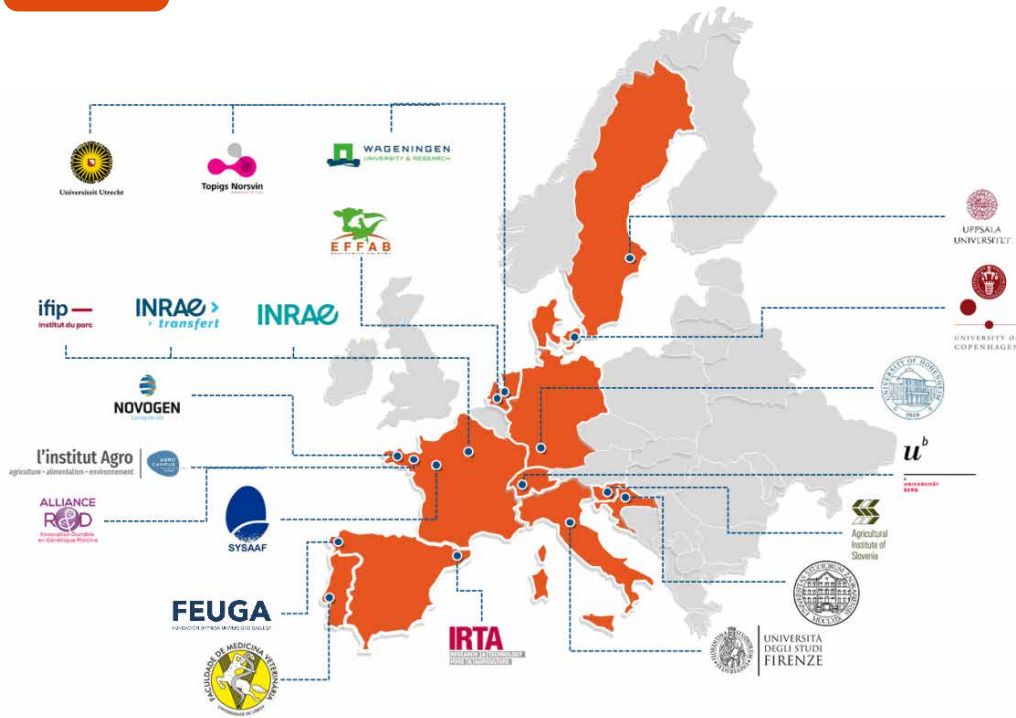# GERONIMO

GENOME AND EPIGENOME ENABLED BREEDING **IN MONOGASTRICS**

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GEroNIMO AT A GLANCE

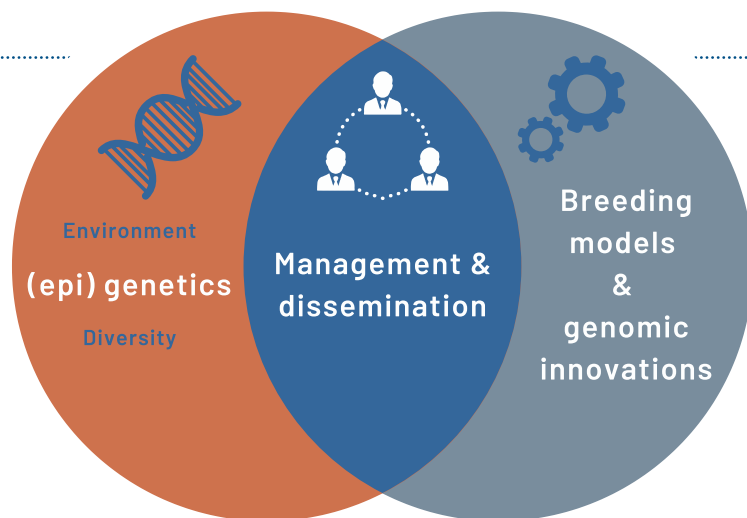|	
Coordinator:	**Frédérique Pitel (INRAE)**
Deputy Coordinator:	**Tatiana Zerjal (INRAE)**
21 Partners:	**13 European research institutes and higher education organisations, 3 management and dissemination partners and 5 SME's / associations of private partners**
Duration:	**June 1st, 2021 – May 31st, 2026**

What do we aim for?

GEroNIMO will provide pig and chicken breeders with new knowledge and tools to promote innovative genome and epigenome-enabled selection methods for Efficient Livestock Production (ELP) traits such as feed efficiency and fertility.

Why?

- Pig and poultry productions contribute directly to livelihoods and food security, representing the most used and preferred animal protein sources worldwide.
- With an increasing human population, improved economic conditions in developing countries, and consumer preferences, the demand for animal products is increasing
- The breeding sector needs to find solutions that are cost and resource-efficient to move toward a sustainable animal production

The tools and knowledge provided by the GEroNIMO project will allow to propose better (epi)genomic prediction models that will improve the accuracy of selection to guarantee improved production efficiency and product quality while promoting resilience, animal health and welfare, and ensuring sustainable use of resources. The project outcomes will also contribute to the Farm to Fork strategy and sustainable development goals

Environment

(epi)genetics

Diversity

Management & dissemination

Breeding models & genomic innovations

Project structure

The project is constructed using a multi-actor approach considering the involvement of all parties - private and academic-, to ensure relevant questions and efficient knowledge transfer throughout the project stages.

The GEroNIMO project will contribute to the development of sustainable and welfare-friendly animal systems by improving knowledge of (epi)genome-to-phenome relationships, taking into account genetic and non-genetic mechanisms and epigenetic diversity.

Expected impacts

Companies and farmers

- New statistical models leading to a more balanced selection, taking into account trade-offs and biological impact of environmental variability
- Cost-effective biomarkers for routine use in improved prediction of traits (meat and egg quality, reproductive quality, detrimental behaviours)
- Improved conservation options for genetic diversity among and within breeds
- Evaluation of the feasibility and social acceptability of new genome enabled breeding techniques

Society & environment

- Reduced environmental impact of monogastric production systems by providing tools and knowledge to enhance productivity and improve feed efficiency
- New solutions to reduce welfare and health problems occurring in intensive poultry production
- Preservation of traditional sustainable production systems and related local economies by providing phenotyping and (epi)genomics strategies for local breeds