

# Study on feeding strategies to diversify the protein sources used in different livestock production systems in the EU

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Main findings and recommendations

# Objective and scope of the study

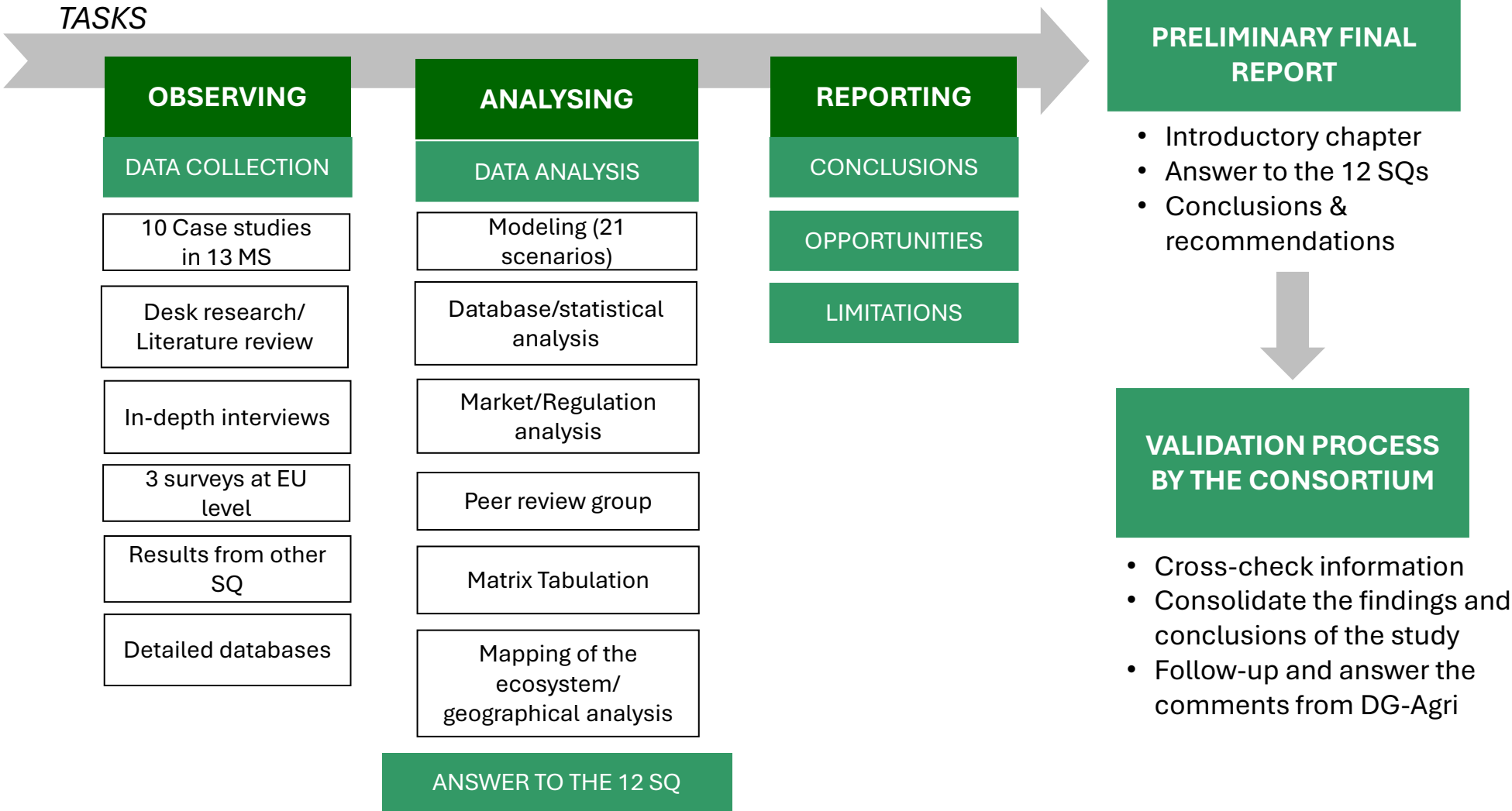
## Objectives :

- To analyze the **opportunities** and **limitations** for **diversifying** animal feed sources and **reduce EU import dependency**
- Focusing on **protein feed**
- Considering:
  - **different livestock species** and
  - **different production systems**
  - **local, regional and national specificities** in the EU
- Collect **best practices** that could be implemented in the EU livestock sector
- Identify suitable **policy measures** to diversify protein feeds

## Scope :

- Livestock sectors: pigmeat, dairy cattle, beef, laying hens, broiler, dairy goat, sheep meat
- Production systems: conventional (intensive and extensive), non-conventional (organic, non-GM and PDO/PGI)
- Geographical coverage : EU-27

The methodological approach encompasses a diverse array of tools, incorporating both quantitative and qualitative data



# Outputs from the analysis (1/4)

## **Demand and supply for plant proteins dedicated to livestock sector in the EU :**

- The volume of the EU crude protein demand for feed in the 2021/2022 campaign was 72 million tonnes
- 55 million tonnes of crude proteins came from the EU : 77% of protein autonomy
- The EU feed market is self-sufficient in roughage.
- 90 % of cereals feed is produced in the EU.
- only 37% of co-products (e.g. protein meals) are produced in the EU. The self-sufficiency ratio for oilseed meals is 23% and 3% for soya bean meals

## **The diversification levers are known**

- Increase in the quality and/or the share of proteins in the forage/roughage ration of ruminants: integration of fodder legumes (dried alfalfa), improved pastures and grassland management (balanced grass and legumes mixtures), or meslins (i.e. mixture of cereals and grain legumes).
- Increase in the production of soya bean, sunflower, rapeseed and of pulses in the EU.
- Replacement of soya meals by the development of improved meals from sunflower or rapeseed (high protein (HiPro) sunflower or rapeseed meals) or from legume crops (e.g. shelled beans) cultivated in the EU.

# Outputs from the analysis (2/4)

## Various complementary strategies for diversification

- Better characterisation of livestock needs (to avoid an excessive supply of certain nutrients)
- Better characterisation of the nutritional values (e.g. amino acid profile, content in starch, fibre, etc.)
- Selection of new crop varieties less rich in anti-nutritional factors (ANF), or richer in specific amino acids (e.g. fava beans).
- Selection of crops providing stable and higher yields (e.g. HiPro rapeseed), better adapted to various pedoclimatic regions of the EU (e.g. soya beans varieties).
- Selection of more robust animal species (especially monogastric species), less sensitive to ANF and more adapted to diversified diets.

## More innovative strategies

- The introduction of insects that is relevant in terms of nutritional values and complementary to raw materials grown in the EU.
- A circular economy approach that could help keep nutrients in the feed system, for example by recovering Processed Animal Proteins (PAPs) and former foodstuffs.
- Contributions of amino acids or enzymes in rations in order to optimise the use of nutrients from raw materials or to reduce the need for some raw materials such as soya bean meal.

# Outputs from the analysis (3/4)

## **Results of the scenarios modelled demonstrated the relevance of some levers compared to others.**

Diet of ruminants:

- increasing the share of proteins ingested via an increase of grass or roughage/forage in the ration and by integration of fodder legumes (e.g. dried alfalfa),
- improved pasture and grassland management.

Increasing the production of protein crops and oilseeds and developing varieties and processes to improve their nutritional profile and limit their yields variation, is systematically emerging as another relevant lever.

## **Several combinations of levers: the only diversification solution**

The challenge of diversification is to implement different combinations of levers adapted to

- the needs and conditions of the agricultural sectors
- the various EU regions and to the various types of farms

# Outputs from the analysis (4/4)

## Competitiveness (and complexity) are the core challenges

- Competitiveness of the related crops compared to imported soya bean,
- Competitiveness of the related crops compared to cereal crops in competition in crop rotation.

→ Economic factors are the most important determinant in the choice of raw materials for arable crop farmers and feed manufacturers. : relative price/yield, availability, volatility and risk

But not only:

The grass lever for animal breeders : Land availability, working time, agronomic expertise, zootechnical knowledge and yield variability are also crucial factors besides economy that induce livestock breeders to increase the proportion of grass in the ration or not

- Rapeseed is generally competitive compared to wheat
- For protein crops and sunflower, it is hard to compete with maize across the whole EU etc.

# Recommendations

Even with strong political will, the shift (if even possible) from the present situation to 'zero importation of protein-rich products' would **necessarily take decades**.

➡ We recommend to, at first, temporarily increase support to plant protein cultivation in the EU to enable an increase in production and a shift (which will take time) of value chains to more EU-grown plant proteins.

➡ Once imports would significantly reduce via those temporarily measures, new measures would be adopted to diversify and secure protein sources with close partners (e.g. Ukraine) for protein crops, soya beans and HP sunflower meals.

**Above all, long-term commitments are crucial in the agricultural sector.**

# Generic recommendations

- **Improve the competitiveness** of proteins sources within the EU by
  - Developing a significant research plan : variety selection , development of innovative raw materials (e.g. algae), etc
  - Temporarily, increase support to plant protein cultivation in the EU (the coupled income support of the CAP could be used )
- **Support the value chains and farmers for the necessary investments** linked to the development of all the alternatives (the investments supported by the second pillar, structural funds for the industry)
- Increase support through **the harvest insurance included in the CAP**
- Through support to operational programmes of producers organisations, incentivise, in the value chains, **a system of negotiation** to guarantee the long-term availability of products and the price paid to producers
- Encourage Member States **to set up national policies**: Setting up a system of payment for environmental services, in complement to eco-schemes and agri-environment and climate measures, defining ceilings of animals by available land (e.g. like in the Netherlands)