Research topic: Analysis of the sustainability of the food supply chain (ClearFarm1)
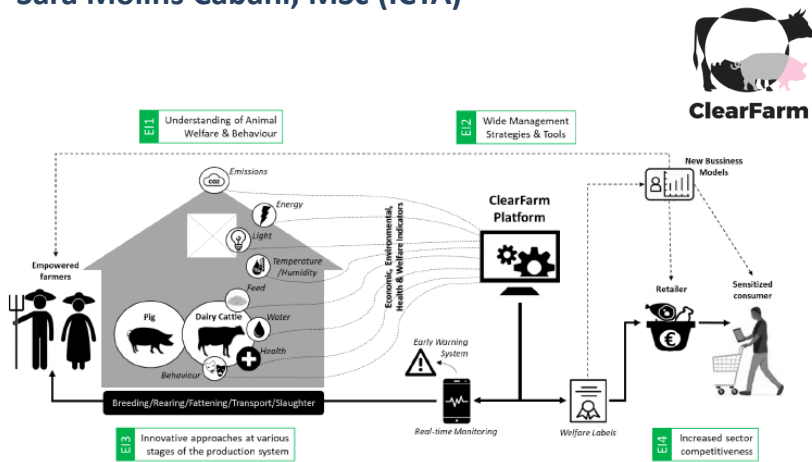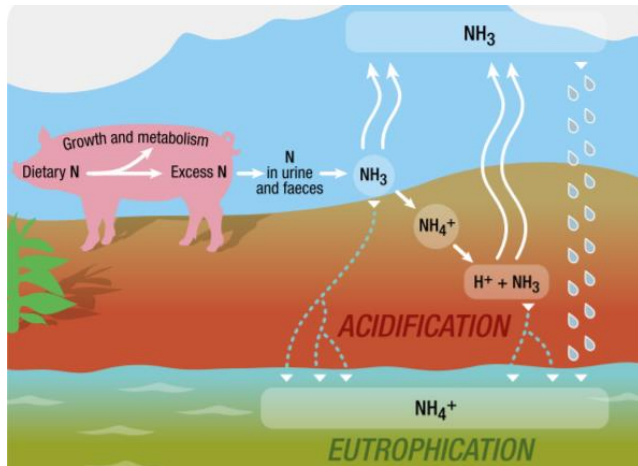
- Research line: Resource management for a Circular economy
- Research group: Sostenipra

CONTACT: laura.talens@uab.cat; sara.molins@uab.cat

Supervisor:
Laura Talens Peiró, PhD (ICTA)
Sara Molins Cabaní, MSc (ICTA)

Animal Welfare and environmental impacts: from farms to supermarkets

Food quality is not only determined by the overall nature and safety of the end product but also by the perceived welfare status of the animals from which the food is produced. There is growing evidence that consumer interest in animal welfare is starting to translate into real changes when purchasing products. The objective of the ClearFarm project is to develop a mathematic algorithm that combines data on animal welfare and the results of life cycle assessment to provide more complete information on the sustainability of the food system.

In this Master Thesis, the student will perform a state-of-the-art analysis on animal welfare. The goal is to identify how life cycle assessment can be used to support animal welfare information that will assist (i) producers and (ii) consumers on decision making within the dairy cattle and pork value chain.

Main aim: To analyse the current practices on sustainability of the food industry

MAIN TASKS:

1) To perform a detailed literature survey on animal welfare by checking EU regulations and initiatives (i.e. from farm to fork), sectorial studies, research and innovative projects, consumer initiatives, new labeling systems and other environmental management practices.

2) To analyse more precisely how the results of the LCA could be used together with animal welfare indicators.

3) To develop a set of indicators combining LCA and animal welfare

4) To test the set of indicators from 3 in a case study on dairy cattle or pork value chains.

5) To write a paper with the finding (tentative date: June 2023).

icta **Institute of Environmental Science and Technology·UAB**

UAB Universitat Autònoma de Barcelona

Supervisor:

Laura Talens Peiró, PhD (ICTA)
Sara Molins Cabaní, MSc (ICTA)

EXAMPLE Nitrogen (N) flux – Consequence of excess N excreted by pigs on the environment: acidification and eutrophication (NH_3 = ammonia; NH_4^+ = ammonium)

Are current indicators for emissions measuring well the environmental impact of animal farming?

Food systems account for nearly one-third of global GHG emissions. Among GHG emissions, methane is at the spotlight of the scientific discussion as the way the various metrics to assess global warming impacts consider methane has major implications on the carbon footprint of products and services, and on mitigation strategies. Analogously, current methods to assess nitrogen and phosphorous emissions have a direct impact of the results.

In this Master Thesis, the student will perform a state-of-the-art analysis of the indicators used to assess emissions in animal farming. The goal is to perform a critical review of the indicators and identify those more suitable for life cycle assessment that will assist (i) producers and (ii) consumers on decision making within the dairy cattle and pig value chains.

Main aim: To analyse the current indicators to assess emissions of animal farming

MAIN TASKS:

1) To perform a literature survey about the methods currently used to measure emissions of animal farming.

2) To do a critical review of specific methods for carbon, nitrogen (incl. ammonia), and phosphorous, and their potential use in LCA.

3) To test the set of indicators from 2 in a case study on dairy cattle.

4) To test the set of indicators from 2 in a case study on pork value chains.

5) To write a paper with the finding (tentative date: June 2023).