

Project title: OPTINORFARM - Economic and Environmental Optimization of Norwegian Farms

Duration: January 2023 – December 2026

Client: The Research Council of Norway

Project leader: Mario Guajardo

Project description

Dairy and meat products are essential food in the diet of many people. The production of this food originates at cattle farms, where farmers need to make many decisions, for example about how to use their land, how many animals to grow, and how to feed the cattle. On one hand, these decisions must look for economically convenient ways to run a farm, so it can be a viable business for farmers. On another hand, these decisions must also consider the environmental impact, as farm activities produce greenhouse gas emissions. Considering both economic and environmental criteria is a challenge for the farmers. The main objective of this project is to develop optimization models and methods to support decision-making at Norwegian farms, considering simultaneously economic and environmental goals. To this aim, the project deploys a collaboration between research organizations and industry partners, combining technical expertise on multiple disciplines (such as mathematical modeling, computational optimization, animal science, and farm management) with practical knowledge from main stakeholders in the dairy, meat and agriculture sectors. This collaboration will actively look for case studies to test the optimization models and methods in real farms, involving farm advisors and end users. Ultimately, the project seeks to expand the access to decision support for farmers in Norway, and help them meet environmental goals in a profitable manner, which in turn will contribute to the development of Norway as a food-producing nation.