

Member Profile



research takes many directions

The Norwegian Institute of Food, Fisheries and Aquaculture Research (Nofima) boasts nearly 400 employees across five different locations, with the head office in Tromsø in the far north and many food packaging functions centred on Ås, outside Oslo in the south.

This large organization covers a huge breadth of research, with no fewer than 626 projects taking place during 2021. This is partly explained by the fact that Nofima was formed in 2008 by the merger of four separate bodies: a general food research institute (Matforsk) and others covering specialist areas, including fish and seafood.

The current institute is over 50% owned by the Norwegian state, with the Foundation for Agricultural Food Research accounting for slightly less than one third. In 2021, sources of funding included the Norwegian Research Council (38%), ministerial funds (16%) and industry (22%), with other sources, including the EU, contributing the remainder.

On the packaging side, explains senior scientist Marit Kvalvåg Pettersen, projects divide into three main areas: there are research projects, which may or may not include some business involvement; competence-building projects, which will involve business on some level; and innovation projects, which tend to be industry-led.

An example of the latter is the ReducePack project, for which she is project manager, says Pettersen. This is owned by Bama, Norway's largest fruit and vegetable distributor, with the participation of other commercial project partners, and with R&D provision from Norsus and Lund University, Sweden, as well as Nofima.

"This is about reducing the amount of plastics, replacing it with other materials, without reducing shelf-life; reducing requirements for virgin polymer by using recycled content; and reducing the overall amount of packaging used," she explains.

The Recy-Food-Pack project is an example of research carried out with another R&D partner, in this case Norner, where business is less involved and does not determine the direction the project takes in the same manner as in the innovation projects.

Here, the focus is on developing sustainable and safe food-related uses for post-consumer recycled (PCR) plastics. Work packages include exploring the potential for closed-loop systems in Norway, and engineering sandwich structures with PCR content, related both to material safety and food quality, says Pettersen, who is project manager at Nofima, here, too.

Due to the pandemic, some projects have been extended, and Recy-Food-Pack is now scheduled to run until the end of 2024.



Right to left, Marit Kvalvåg Pettersen and her Nofima colleagues Magnhild Seim Grøvlen and Anlaug Ådland Hansen
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Due to finish at the same time, FutureFoodControl is one of the Nofima Food Division's strategic programs. A major focus falls on reductions in microbiological risk, limiting food waste and, again, minimising plastics use. Among other areas included here are alternative materials to plastics, active & intelligent packaging and other innovative packaging technologies.

"This is quite a big project, and it's one where we carry out basic research, with the aim of providing better knowledge to industry," says Pettersen.

In this instance, the budget has come from Norway's Agricultural and Food Industry Research Funds, which in turn originates in a levy placed on food and drink products.

Nofima has had a close involvement with IAPRI over the years. For young researchers, Pettersen believes, the IAPRI Conference presentations can be especially rewarding. "In recent years, in addition to the scientific relevance, the networking aspect has been just as important for me, including through the Working Groups [now Communities of Practice]," she says.

Pettersen is an associate professor at the neighbouring Norwegian University of Life Sciences (NMBU), and interaction between Nofima and the university allows MSc and PhD students to carry out practical research projects while retaining an academic supervisor.

"Historically, Nofima has worked more with plastics than other materials, with the main focus on increasing shelf-life," says Pettersen. But as we have seen, this is changing, and has been for the last 10 years or so, with a growing emphasis on wider sustainability, recycling, and reductions both in food waste and in virgin polymer consumption.

"Next year sees the start of a new project working with fiber-based materials," she says. "Looking at new materials will be part of the road ahead, but I think plastics will still be there. We're also looking at

rethinking food systems.” This will have major implications for processors, retailers and consumers, with reuse systems among the options being investigated.

The Packaging and Goods Transport Department of AIDIMME (formerly AIDIMA) has been helping companies increase their competitiveness through packaging and logistics technology services for almost 30 years, currently having more than 700 supporting companies.

The department is divided into three sections that work together to offer engineered packaging solutions and execute R&D and innovation projects. It is located in Paterna, outside Valencia, Spain. Francisco Sánchez was appointed head of department in 2019.