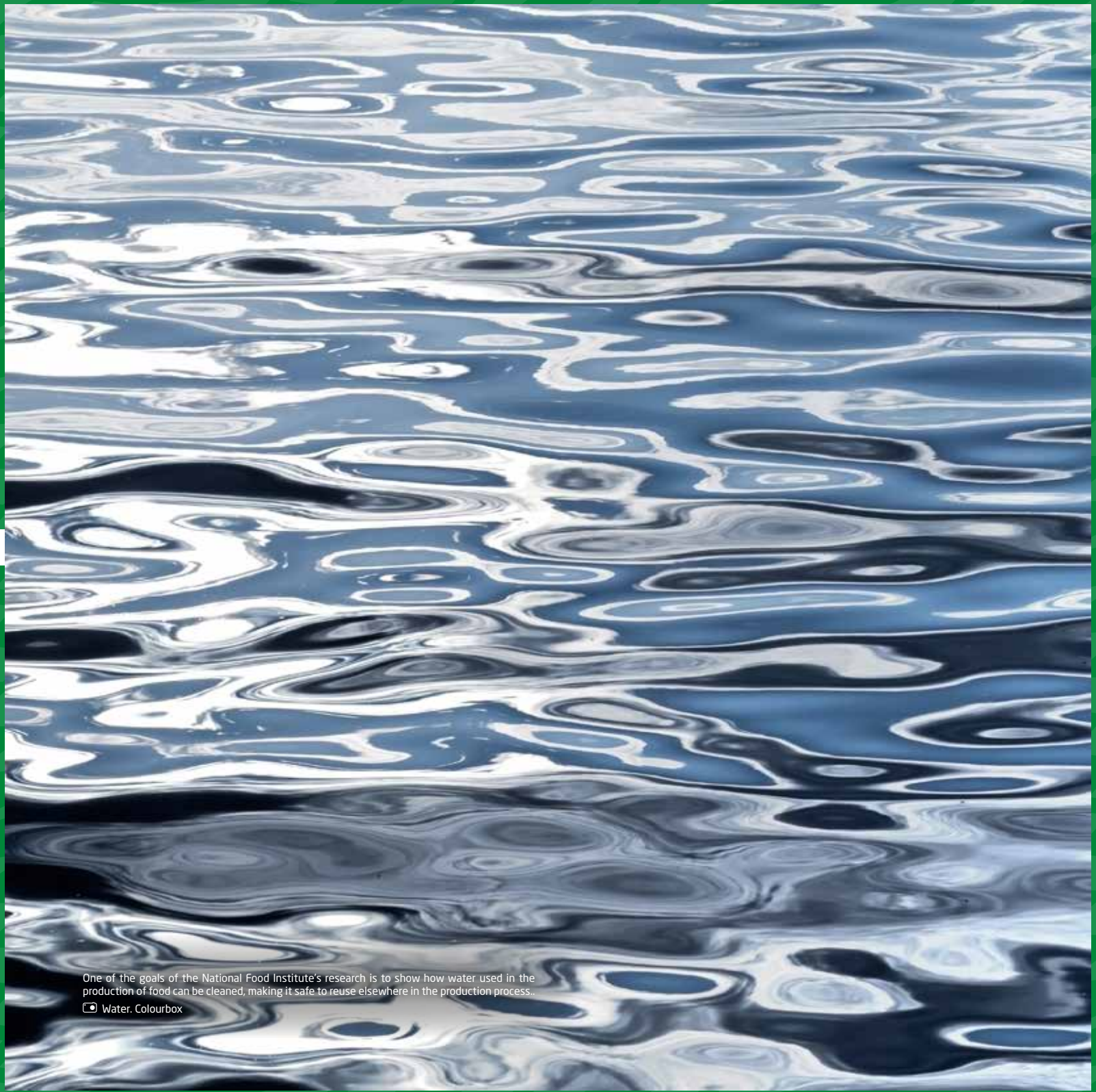


One of the goals of the National Food Institute's research is to show how water used in the production of food can be cleaned, making it safe to reuse elsewhere in the production process..

Water. Colourbox

Less water from sea or field to plate

A food product's journey from sea or field to plate requires water. Industrial food production can utilize water in a more sustainable way by using less potable water and discharging less waste water. The National Food Institute can help the industry achieve this.

"Our research can help to reduce both the water consumption and the environmental impact associated with a food business' production of e.g. a pizza, right from the dough to the cheese," Professor and Head of Research Group Lisbeth Truelstrup says.

When a dairy makes cheese, the raw material is milk, and milk consists of 90 % water. The dairies can recycle the surplus water. You can extract all whey proteins and lactose from the residual products so only water is left. The dairy can use this water for cleaning. This streamlining has inspired other industries to get involved in research projects in which the National Food Institute takes part, with the purpose of increasing the recycling of water in the production.

Clean chicken feet with 50 % less water

Chicken feet are a delicacy for Asian consumers. The companies can wash the chicken feet more efficiently without compromising on food safety. The Institute has documented this along with the Danish Technological Institute and a company. When the wash water was filtered, the company could reuse it in the first wash of the next batch of chicken feet.

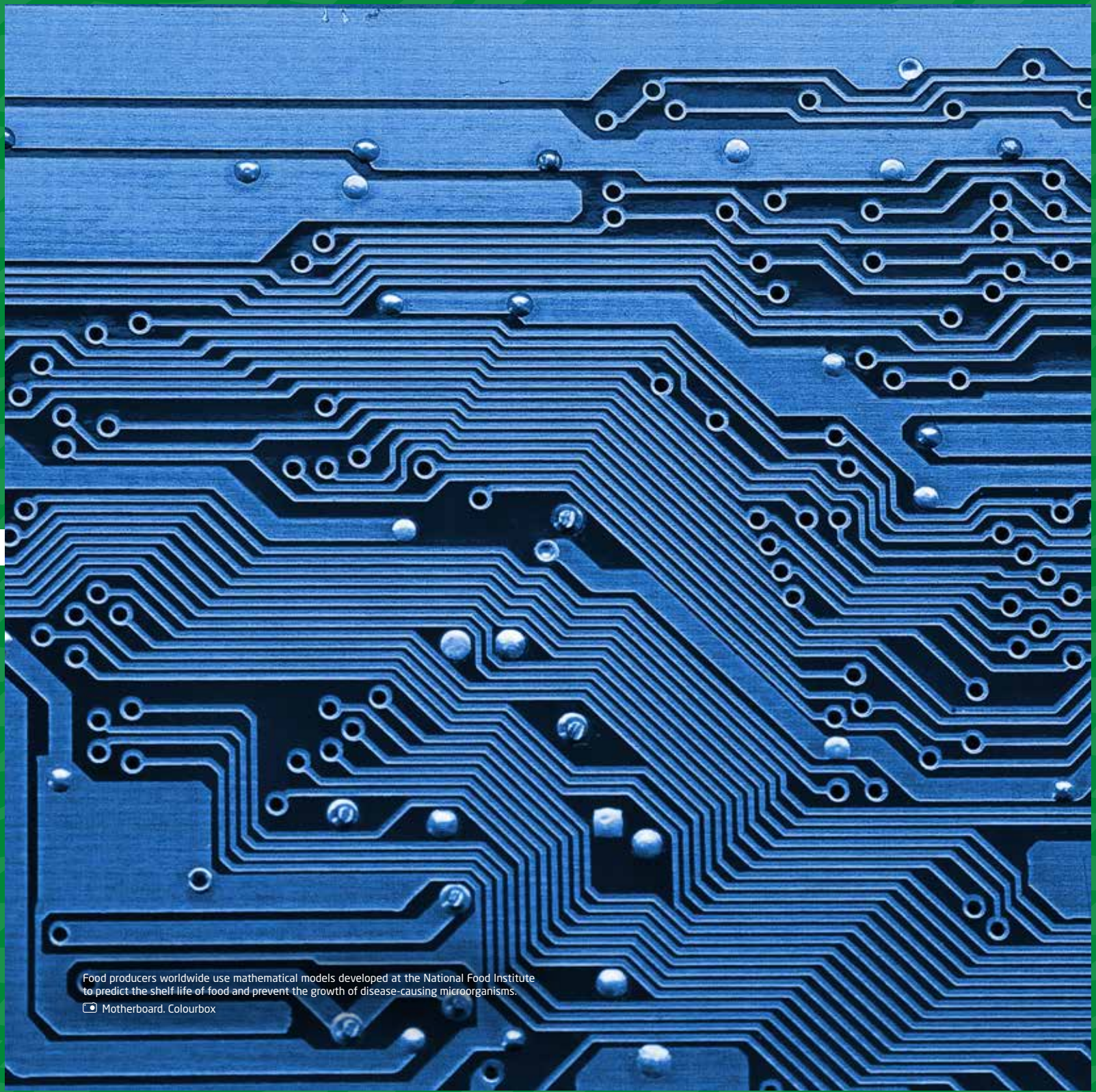
In another project, the Institute has examined whether it is possible to lead used drinking water through an advanced water treatment plant and then treat it with ultraviolet light. The analysis has shown that reusing water is possible. However, to comply with the current regulations, the recycled water has to be piped through separate pipes.

Safe recycling

As a rule, and according to legislation, food businesses must use drinking water in their production of foods, including for cleaning in connection with the production. However, they can use other types of water as long as the water does not compromise on food safety. And this is where the National Food Institute can provide help. If an industry wants to recycle water from their production, the Institute can inform whether and how it is possible to do so in accordance with legislation.

Of appropriate quality – what does that mean?

Recycled water does not have to be of drinking water quality. It just has to be of an appropriate quality – but how does a company measure and document that the quality is appropriate? And how can the company perform own-checks and provide the documentation needed so that the Danish Veterinary and Food Administration can allow the recycling of water? In such case, the industry can help conduct a risk assessment and own-control plan.



Food producers worldwide use mathematical models developed at the National Food Institute to predict the shelf life of food and prevent the growth of disease-causing microorganisms.

Motherboard. Colourbox

“**The ambition is** that we will be able to use purified seawater in the production of food in the future. Unlike Denmark, Greenland does not have enough freshwater in several local communities. Many fish factories up there use more than 75 % of the daily production of drinking water. This limits both the industries’ production and the growth of tourism, which would otherwise be able to bolster Greenland’s economy. The problem can be solved when it is safe and legal to use seawater for production.”

Lisbeth Truelstrup Hansen
Professor and Head of Research Group