



Chapter 5.

# Nutrition

Dr Stephan Peters, Nutrition Research and Food Legislation Manager,  
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## A **sustainable** diet is a **delicate** balance

*A sustainable diet must be healthy, acceptable and affordable for all. This makes composing a sustainable diet a delicate balance. A switch of a few food items can affect nutritional value and environmental footprint significantly. Modelling tools such as the Dutch developed Optimeal® help understand the impact of food choices on the environment, health and food prices.*

Sometimes replacing certain foods leads to counter-intuitive results. For instance, replacing animal-based foods with plant-based foods does not necessarily lower the diet's carbon footprint.

These effects are shown in the modelling tool Optimeal® developed by the Netherlands Nutrition Centre and Blonk Consultants (Netherlands) using the data from life-cycle assessment methodology to calculate the environmental impact of the food we consume.

The Optimeal® model calculates nutritional, environmental and price impact when a category of food is omitted or replaced. The 'reference diet' is the recommended daily intake of nutrients and consumption of foods advised by the Dutch Health Council and the Netherlands Nutrition Centre.

The European Milk Forum (EMF) is further developing the Optimeal® modelling tool to include dietary, environmental and price data from all the EMF member countries (Northern Ireland, Republic of Ireland, France, Netherlands, Austria, Belgium, Denmark and Norway).



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“Essentially, Optimeal® calculates what food products you need to consume in order to replace the nutrients you exclude when omitting certain foods. Of course, it is a standardised model, but it gives insights for composing both more healthy and more sustainable diets,” says Dr Stephan Peters.

“The nutrients from dairy have to be compensated for by other foods and not individual nutrients. This means that not only protein needs to be replaced, but also calcium, vitamin A, B12, B6 and more,” he explains.

“For this reason, you have to consume large amounts of mainly beans, pulses and vegetables. Perhaps surprisingly, the CO<sub>2</sub>-footprint of the alternative diet is approximately the same as diets with dairy,” Dr Peters continues.

### Healthy and sustainable – and affordable and acceptable too

Besides following the recommended diets and nutritional intake, Optimeal® has adopted the four dimensions of sustainable diet as defined by FAO, the UN's Food and Agriculture Organization – namely health, sustainability, affordability and cultural acceptability.

Therefore, the model is designed to put forward diets as close to the recommended diet as possible with respect to these four dimensions.



Dr Peters elaborates: “A diet could easily have a low emission but at the same time be unhealthy, expensive or unfamiliar. For instance, a very large amount of vegetables is more costly. Or sweets and snacks are cheap, but definitely unhealthy. That is why we strive to follow the recommendations of the Dutch food-based dietary guidelines.”

### Don't jump to conclusions

According to Dr Stephan Peters, the full potential of the modelling tool is yet to be fulfilled:

“We want to be able to give more nuances to the model. Expanding the food groups, we include and expanding the dimensions of the environmental impact to water use and land use,” he explains.

While Optimeal® has been widely recognised in the European science community, according to Dr Peters, it has the potential of greater impact outside academia too.

“Optimeal® and related linear programming tools could help inform the public debate. The common notion that animal-based foods always have a higher environmental impact than plant-based sometimes becomes too simplified. There are more consequences than what is usually presented by policy makers for instance. We need more nuances,” he says.

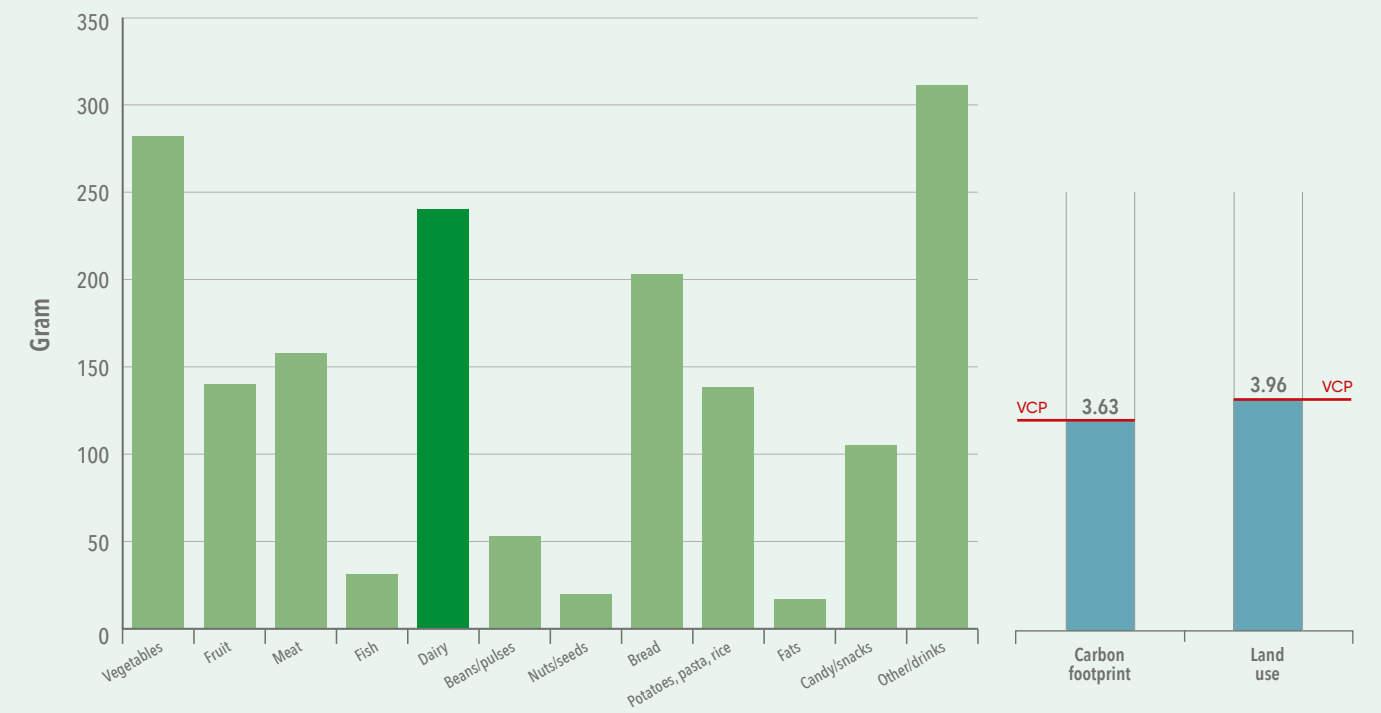
Therefore, to Dr Peters, it is important that we treat the debate on sustainable food with respect and don't jump to conclusions. We will have to keep the good things of a healthy, nourishing, affordable food pattern within the need to create an even more sustainable production.

“When you change diet patterns, it sometimes comes with totally unexpected consequences. It is a delicate balance between economic, cultural, ecological and health aspects. When you want to change the food system or consumption, you should take into account all these four factors. When one is ignored, you are doomed to fail. In addition, you must monitor the consequences critically. We tend to forget this,” Dr Stephan Peters concludes.

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Optimeal® uses average Dutch diets based on the Dutch National Food Consumption Survey and from September 2020, EU data is a part of the reference data. The model has so far included a life-cycle assessment of 208 products across food groups.

As illustrated in the chart below, the model makes it possible to adjust the intake of various food groups like bread, fish, fruit, vegetables, dairy and so on.



### About Dr Stephan Peters:

Dr Stephan Peters is manager of nutrition and health at the Dutch dairy association since 2015 and is specialised in the role of dairy in healthy and sustainable diets and food systems. Dr Peters has previously worked on the development of Dutch food-based dietary guidelines and was product developer of clinical nutrition for cancer patients. Dr Peters has a MSc in nutrition and toxicology and a PhD in clinical nutrition in cancer patients.



