



Our food – a risk?

**Sustainability in nutrition
and agriculture**

Good hospital food Interview with Thomas Voss

Giving up is not hard to do



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No meat? On a trek in 1996 in the company of vegans and vegetarians I noticed: it's actually OK. And I didn't even find it particularly difficult. Perhaps because pasta, pancakes and a pizza from the camping stove were particularly delicious. But perhaps also because I didn't immediately become a strict vegetarian but have continued to eat fish and seafood from time to time.

That's what I am still doing. As a result, I frequently notice how sensitively or defensively some people react when I say that I don't eat meat. However, it is clear that we must urgently reduce our consumption of animal products. Our meat-eating habits overburden the planet through excessive land consumption, monocultures, the use of fertilisers and pesticides for feed production, the methane emissions of livestock farming and the impacts on groundwater, coastal waters, biodiversity and the climate.

At first glance one might think that it should be easy to bring about the necessary agricultural transformation. After all, agriculture does not just cause environmental and climate-related problems but is also directly affected by them; one has only to think of the drought and harvest losses of the summer of 2018. But unfortunately it is not that simple, because state subsidies continue to encourage a focus on industrial and environmentally harmful production methods. Organic agriculture in Germany is advancing only very slowly and by comparison with the European pioneers it is still at a surprisingly low level. According to Eurostat, Austria led the way in 2018, with 24.1 percent of its farmland being organically managed. Estonia and Sweden, with figures of 20.6 percent and 20.3 percent respectively, were not far behind, while in Germany the figure was a mere 7.3 percent.

At the same time, we consumers have a part to play. It is true that in Germany people are increasingly avoiding animal products, but the shift is too small and is happening too slowly. In India, for instance, around 40 percent of the population are vegetarian, while in Germany the proportion of vegetarians is in single figures. I am convinced that we could all adopt more sustainable eating habits without finding it a burden or a sacrifice. Just give it a try, learn to appreciate it and perhaps stick with it. Incidentally, the Oeko-Institut has already taken an important step in this direction: in our canteens in Freiburg and Darmstadt and in our internal and external catering at all our sites we deliberately avoid all meat. And we know we can always look forward to really delicious food!

Yours,
Jan Peter Schemmel

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"Many have completely lost sight of the value of food"

More than 1,700 lunches are prepared and eaten in two clinics in Münster and Lengerich every day. On top of that there are breakfasts, snacks and evening meals. But anyone who thinks of hospital food as insipid and cheap hasn't encountered the two Clinics for Psychiatry and Psychotherapy run by the Landschaftsverband Westfalen-Lippe (LWL). These clinics attach great importance to food in terms of both taste and sustainability. Thomas Voss, Commercial Director of the two clinics, has played a key part in the shift towards sustainability – starting back in 1999, when the clinic in Münster became the first specialist psychiatric hospital in Germany to be awarded the EU's eco-management quality seal EMAS. In an interview with eco@work he talks about the use of organic food, going meat-free and preventing food waste.



Mr Voss, why does hospital food have such a bad reputation?

Because it is often very poor. Many hospitals have been subjected to severe economising, with the result that kitchen managers sometimes have just three euros per person per day to spend on food. In the process, many have completely lost sight of the value of food.

What are the key aspects of sustainable mass catering?

There is a social, an environmental and an economic side. It starts with paying kitchen staff properly and having reasonable working hours. Working in the kitchen puts people under a lot of physical stress and time pressure; we must always bear that in mind. We also want to provide a sensible diet. Our kitchen managers therefore have 5.27 euros per person per day to spend on food – by comparison with other hospitals, that puts us in the top third. With regard to the environment, issues such as green electricity and good mobility management are of course very important. And last but not least: sustainable food and as little food waste as possible.

How do you achieve that in practice?

For a start, by using as much organically produced food as possible. At present about 22 percent of our food is organic. We seek maximum animal welfare wherever feasible. In addition we have lots of vegetarian dishes: every Wednesday all meals are completely meat-free. With regard to food waste we are taking a lot of small steps.

For example?

In recent years we have looked in detail at what sorts of waste arise and why. One thing we found is that portions were often too big. So now we put a modest amount on the plate and anyone who is still hungry gets a second helping. That has significantly reduced the amount left on people's plates. We don't simply throw away products that have reached their best-before date; we look at them and use them in staff meals if they are still OK. As a result of such measures, our food waste has fallen by about 13 tonnes since 2014. That means that we are saving a lot of money that we can direct into buying high-quality organic food.

That is probably not enough to cover the higher costs.

No, but there are all sorts of adjustments that we can make to reduce costs without compromising on quality. For example, we have stopped buying expensive veal, and we have made meat portions smaller. We also focus on what is currently in season – foods that are not in season are often very expensive.

Where do you get your food from?

As much as possible from the region. For example, all our pork is organic and comes from a producer group in Berkamen. An organic farmer in Harsewinkel supplies us with beef several times a year. We only use eggs from certified organic farms in the Münster area. And our fresh milk products come from a farm dairy in Münster – they're not or-

ganic, but the animals are kept in decent conditions.

What steps are you taking to become even better?

We regularly ask our guests for feedback. That tells us what is going well and what we could do better. Of course there is still a lot to do. For example, I would like to switch to using only organic poultry, but that isn't readily affordable. In addition, a lot of bread is thrown away on the wards: we want to address that. But I believe that overall we have already reached a very good level.

Thank you for talking to eco@work.
The interviewer was Christiane Weihe.



Talking to eco@work: Thomas Voss,
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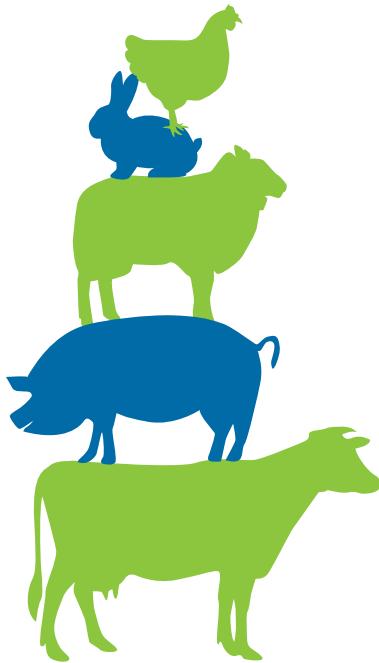
More vegetables, fewer animals

Food and sustainability

The principle: plant-based foods. Animal foods as a supplement. For example, fish once or twice a week. And some meat, but not more than 300 to 600 grams in a seven-day period. That is the diet recommended by the German Nutrition Society (DGE). It would not only be healthier than what Germans currently eat – the average German gets through more than a kilo of meat per week. Eating in accordance with DGE recommendations would also have many positive consequences for the climate and the environment. A study by the Oeko-Institut estimates that the greenhouse gas emissions caused by such a diet are twelve percent lower than those of the average high-meat equivalent. A vegetarian diet could cut climate-damaging emissions by as much as 26 percent; a vegan one could push this reduction to 37 percent.

The German diet is becoming ever more varied and people are making more conscious choices. Sales of organic foods have risen steadily in recent years, totalling 10.9 billion euros in 2018. The number of flexitarians – people who deliberately reduce their meat consumption – is increasing; according to a survey conducted by the German consumer research society GfK in 2016, 37 percent of people now put themselves

in this category. The number of vegetarians and vegans also continues to rise: according to the food report produced by the Federal Ministry of Food and Agriculture (BMEL) in 2019, six percent of respondents in a representative survey classed themselves as vegetarian and one percent as vegan. Plant-based alternatives to meat and sausages are becoming increasingly popular – and not only among vegetarians and vegans.



**GERMANS EAT
AROUND 60 KILOS OF MEAT
PER PERSON PER YEAR.**

But from a sustainability perspective, German consumers are still eating too many animal-based foods. For example, they each get through about 60 kilos of meat per year – which contrasts with the DGE recommendation of 15.6 to 31.2 kilos. The figure of 60 kilos has not changed significantly since 2000. There has also been no significant increase in the proportion of particularly environmentally friendly and high animal welfare meat. Furthermore, the milk products that we consume involve livestock farming and hence represent a not inconsiderable part of the environmental footprint of our diet. “As well as through housing and transport, it is through food that we place the greatest burden on the environment,” explains Dr Jenny Teufel of the Oeko-Institut. “Around 15 percent of the greenhouse gas emissions of private consumption are attributable to the growing, processing, transport and storage of food and to food preparation and the disposal of waste.” And there are other sorts of environmental impact associated with our food. “For example, nitrogen emissions affect the soil, water and biodiversity, and biodiversity is also harmed by

monocultures and pesticide use,” says Kirsten Wiegmann, Senior Researcher in the Oeko-Institut’s Energy & Climate Division. “If you include these problems, then food causes more than a quarter of the damage to the environment and climate that results from private consumption.” It is therefore important to eat fewer animal products and thus reduce the environmental burden of agriculture (for further information see “More checks, fewer animals” on page 8). “Eating in accordance with DGE recommendations would be a huge step forward.”

**HALF THE POPULATION EATS
OUTSIDE THE HOME**

How can a more sustainable German diet be achieved? In collaboration with several partners involved in practical aspects, the Oeko-Institut has looked at this issue in the project “TRAFO 3.0: Developing a model for socio-ecological transformation processes in three practical fields of application”. TRAFO 3.0, which is funded by the German Federal Ministry of Education and Research, uses concrete examples as a basis for analysing how transformation processes can be managed and promoted. One of the processes it considered was reducing the consumption of meat and other food products of animal origin. “One focus was on mass catering. It is apparent that the number of people who eat outside the home – at school, in the canteen or in the nearby snack bar – is growing rapidly. Around half the population are not at home for most of their meals; about 40 percent of what they spend on food is going into the away-from-home market,” explains Jenny Teufel, Senior Researcher in the Sustainable Products & Material Flows Division. “This market is therefore very important in connection with a transformation towards sustainability.” In Teufel’s view, mass catering is also an interesting research field because it can trigger changes at various levels – such as in terms of the amount of meat eaten and the attractiveness of meat-free food

in the eyes of guests. “The food provided in nurseries and schools also has a major influence,” says Teufel, “because it can help children and young people learn about sustainable nutrition.”

As part of the project, the researchers spoke to various players involved in mass catering and organised a workshop with kitchen managers and decision makers. One of the findings was that the transmission of knowledge and experience is important – for example, in the training of cooks and chefs. “Serving vegetarian and vegan food or dishes with a small proportion of ingredients of animal origin involves re-thinking menus and abandoning the traditional menu structure of meat, a starchy filler food and vegetables or salad. But training courses do not yet cover this. As a result, organisations that want to cook more sustainably and use fewer animal products are often organising training themselves,” says Dr Jenny Teufel. “The subjects – both theoretical and practical – covered in training courses for caterers must be revised. And the dialogue between best-practice actors in this area and people who want to make their catering more sustainable is also very valuable.”



**GERMANS THROW AWAY
75 KILOS OF FOOD
PER PERSON PER YEAR.**

A key aspect of more sustainable nutrition is the prevention of food waste, which is responsible for 15 percent of food-related greenhouse gas emissions. Every consumer throws away about 75 kilos of food each year. The majority of this waste – a total of 6.1 million tonnes or 52 percent – arises in private households. "Fourteen percent arises in away-from-home catering, 12 percent in primary production and 18 percent in processing," explains Dr Jenny Teufel. As examples of starting points for preventing waste, Teufel mentions better planning and proper storage of food. "That applies both to private households and to mass catering. In the case of catering, it is of course important to take account of feedback from guests. Regular surveys could help ensure that the food on offer is geared to customers' needs and portion sizes are appropriate. This feedback is particularly important when changes to food plans or reductions in the proportion of animal products on the menu are being contemplated."

And how can people be persuaded to attach greater value to sustainable nutrition? The Oeko-Institut addressed this issue with regard to mass catering in the project "Shaping ecological change" which it conducted for the German Environment Agency. "Information is important, but it shouldn't be problem-focused; instead it should be communicated positively, perhaps through storytelling or via an easily understood logo. In addition, guests can be involved in planning the menu – perhaps via surveys or idea contests. Eating habits can also be influenced by nudging – small changes that create incentives. For example, this could involve always offering one sustainable dish as standard, or offering different portion sizes." But what is crucial is that it must taste nice. Then it can be vegan, vegetarian or low meat.

POLICY MEASURES

The cost of moving towards more sustainable nutrition is also an important



factor. "There is enormous cost pressure in mass catering and that can inhibit change. But one can do things such as refinance high-quality meat by optimising meal planning," explains Teufel. Another useful step could be to make foods of animal origin more expensive – for example by removing the reduced rate of VAT on meat, abolishing environmentally harmful subsidies or introducing an import tax on animal feed. However, Teufel points out that such a step should always be coupled to measures to finance the necessary restructuring of livestock farming. "Otherwise, livestock farming in Germany will simply come to an end and we shall be importing cheaper meat from animals raised in poor conditions." It is also important not to ignore low-income households when making animal-based foods more expensive. "We need to find ways of enabling them to eat sustainably produced meat despite the higher cost."

The Oeko-Institut researcher believes that food and agriculture have finally become one of the priorities on the agenda of the federal and state governments. In her view there are many instruments that could be used to make our nutrition more sustainable. They include food labelling, education and information campaigns and changing the nationwide regulations on the training

of cooks. "And last but not least," says Dr Jenny Teufel "public procurement can exert direct influence, for example via clear specifications on issues such as a compulsory proportion of organic food, reducing food waste and using animal-based foods in accordance with the DGE recommendations in school canteens and government institutions. It would also mean that policy would have an important part to play as a positive role model for others to follow."

Christiane Weihe



Dr Jenny Teufel's research focuses on sustainable consumption and sustainable products. As part of her work as a Senior Researcher in the Sustainable Products & Material Flows Division she studies sustainable nutrition measures. Kirsten Wiegmann, a Senior Researcher in the Energy & Climate Division, works mainly on biomass and land-use assessment and on climate action in agriculture.

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More checks, fewer animals

Agriculture and sustainability

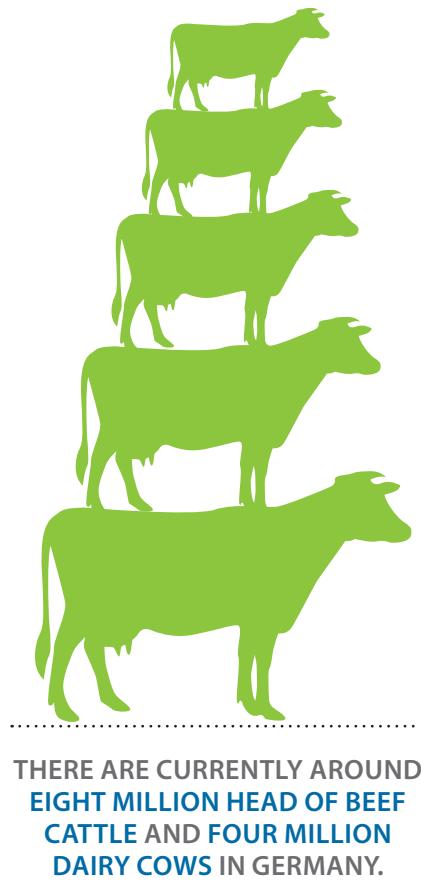
The escalope on our plate or the milk that we stir into our morning coffee don't only affect the cows that are reared and kept for these foods. Our meat and milk consumption also influences the environment and the climate in various ways. It involves high levels of land and resource use, pollution of surface water and groundwater with high levels of nitrates, emissions into the air and land-use change for feed growing; all this leads in turn to biodiversity loss and increased greenhouse gas emissions. The Oeko-Institut is engaged in a number of projects that are exploring how these adverse impacts on the environment and climate can be reduced.

"The consumption of animal products such as meat and milk has adverse impacts at various levels – on our health, on animal welfare and on the environment and climate," says Kirsten Wiegmann, Senior Researcher at the Oeko-Institut. "For instance, the use of antibiotics pollutes water and creates a risk of antibiotic resistance. Feed growing results in the use of pesticides, herbicides and synthetically produced mineral fertilisers. Another major problem in animal farming is the loss of nitrogen into the environment. Nitrate is frequently mentioned, but ammonia is also a major concern, since it leads to the formation of fine particulate matter and ozone. Greenhouse gases – especially methane – are a problem too.



"Cattle kept for milk and meat produce methane during digestion," explains the researcher from the Energy & Climate Division. "These biological processes are of course difficult to control. There is as yet no reliable technology that can reduce methane production in the digestive system of ruminants, although research in this field has been going on for years." Achieving greater sustainability in agriculture requires a multi-pronged strategy. Adopting an integrated policy to reduce nitrogen emissions is a key starting point. The Oeko-Institut and the Research Institute of Organic Farming (FiBL) have explored the basis for this together in the project "Instruments and measures for reducing nitrogen in the context of the Baden-Württemberg nitrogen strategy". "Agriculture uses synthetic nitrogen as fertiliser because there is a shortage of this nutrient in plant-available form in nature," explains Kirsten Wiegmann. "This produces large nitrogen surpluses that escape into the environment, putting species diversity and human health at risk." The surpluses arise mainly from regional separation of crop growing and animal husbandry, and from bought-in animal feed. "Dung and liquid manure are fertilisers and fermentation of liquid manure in biogas plants, for which they provide the main feedstock, could reduce the methane emissions. But it is not worth transporting dung and liquid manure elsewhere unless it is first subjected to expensive processing," says Wiegmann. "Because of this, animal farming areas are saddled with high nitrogen emissions."

As part of the analysis for the Baden-Württemberg Environment Ministry, the Oeko-Institut produced recommendations on reducing nitrogen surpluses. "We need radical long-term measures that target both the agricultural sector and people's eating habits," says Wiegmann. "For example, we must urgently reduce animal stocks. Moreover, we mustn't allow these stocks to become further concentrated in particular regions, as has happened in the past. The reintroduction of production systems in which a minimum area of land per unit livestock is assured is overdue."



THERE ARE CURRENTLY AROUND EIGHT MILLION HEAD OF BEEF CATTLE AND FOUR MILLION DAIRY COWS IN GERMANY.

In addition, an expansion of organic agriculture has worthwhile potential in terms of reducing nitrogen, because mineral fertilisers are banned in organic systems. Another key element in the Oeko-Institut's analysis is an altered legal framework. "This must consider nitrogen emissions on an integrated basis and specify binding reduction targets – perhaps even via a separate nitrogen act," says Wiegmann. "At the same time there must also be a programme of measures that shows how these targets can be achieved." It is also important to monitor whether farms are actually complying with the rules. "At present there are not even any statistics on how much mineral fertiliser is being applied."

MORE SUSTAINABLE PIG FARMING

As part of the "TRAFO 3.0" project, the Oeko-Institut explored how activities such as pig farming can become more sustainable. The resulting recommendations include tapping into societal trends such as the increasing openness to products of more animal-friendly farming systems; one way of doing this would be through a compulsory decla-

ration of animal welfare conditions on the products. "It is also worth promoting technical, institutional and social innovations and, for example, enabling the establishment of regional value chains by encouraging cooperation between the different players involved, or using digital media to market particularly high animal welfare meat," explains Dr Jenny Teufel, Senior Researcher in the Sustainable Products & Material Flows Division. It is equally important, she notes, to dismantle non-sustainable structures. "For example, the practice of keeping fattening pigs in unstructured pens on fully slatted floors should be ended. It is associated with disease and behavioural disorders," says Teufel. "In addition, time windows should be used and farm handovers, for example, actively supported in order to achieve goals such as reductions in animal stocks or improvements in animal welfare." The Oeko-Institut also believes that it is worth looking at Germany's neighbour, France, which has published a roadmap for food and agriculture policy to 2022 that is geared to sustainability. "Aspects of this include declaring husbandry conditions on meat products and ending the use of glyphosate."

Agriculture is certainly facing enormous challenges in relation to the climate and environment. In the researcher's view, the European level also has an important part to play in tackling these challenges. "For one thing, we must of course comply with the EU requirements in relation to nitrate in groundwater; clear fertiliser regulations are needed here," says Kirsten Wiegmann. In addition, the Oeko-Institut regards the EU's Common Agricultural Policy (CAP) as a potentially important lever for greater sustainability in agriculture. "The EU's agricultural aid money must at last be tied to compliance with higher environmental and animal welfare standards – I expect that this will eventually happen," says the researcher. "That would be another important move towards more sustainable agriculture, requiring farmers not just to change their thinking but to become more sustainable for economic reasons."