



**8<sup>th</sup> Animal Task Force Seminar**  
**07 November 2018**  
University Foundation, Brussels, Belgium

# **Seminar report**

# Balance production/consumption: Animal farming for Humans' wellbeing & planetary health

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## Table of contents

<b>Programme</b> .....	3
<b>Welcome and Introduction</b> .....	4
Introduction to societal expectations and policy making .....	4
<b>SESSION 1: Animal production &amp; planetary health</b> .....	5
Animal farming for Humans' well-being and planetary health: observations at the global scale .....	5
Environmental impacts, roles and services from livestock farming: current situation and avenues for improvement .....	6
Panel discussion .....	7
Assessment of environmental impacts and services of animal food systems .....	7
What is the Safe Operating Space (SOS) for EU livestock? .....	7
Discussion, moderated by Martin Scholten, with: .....	8
<b>SESSION 2: Healthy diets, rural development and economics</b> .....	10
Risks and benefits from animal products and their substitutes: Vision from nutritional science .....	10
Importance of livestock farming for the development of rural territories in Basque Country: strategies and action plan .....	11
Panel discussion .....	12
Economic consequences of different scenarios of animal production in Europe .....	12
Discussion moderated by Martin Scholten, with: .....	13
<b>Closing remarks</b> .....	16

# Programme

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## Welcome and introduction

Jean-Louis Peyraud, ATF President, INRA

[@AnimalTaskFrc](#)

## Introduction

Fredrick Federley, Member of the European Parliament

[@federley](#)

## SESSION 1: ANIMAL PRODUCTION & PLANETARY HEALTH

### Environmental impacts, roles and services from livestock farming: current situation and avenues for improvement

Pierre Gerber, World Bank

[@WorldBank](#)

Monika Zehetmeier, Bavarian State Research Center for Agriculture

## PANEL DISCUSSION

### Assessment of environmental impacts and services of animal food systems

Anders Henrik Herlin, Swedish University of Agricultural Sciences [@\\_SLU](#)

### Concept of Safe Operating Space for EU livestock

Erik Mathijs, Catholic University Leuven

[@erikmathijs](#)

Discussion moderated by Martin Scholten (WUR), with:

[@mcthscholten](#)

Anders Henrik Herlin, SLU

[@\\_SLU](#)

Erik Mathijs, K.U. Leuven

[@erikmathijs](#)

Karl Schedle, pig farmer

[@BOKUvienna](#)

Florian Leiber, FIBL

[@fiblog](#)

## SESSION 2: HEALTHY DIETS, RURAL DEVELOPMENT & ECONOMICS

### Risks and benefits from animal products and their substitutes: Vision from nutritional science

Edith Feskens, WUR

[@edithfeskens](#)

### Importance of livestock farming for the development of rural territories in Basque Country: strategy and action plan

Karlos Mas, Lorra S. Coop

## PANEL DISCUSSION

### Economic consequences of different scenarios of animal production in Europe

Annika Thies & Josef Efken, Thünen Institute of Market Analysis

[@Thuenen\\_aktuell](#)

Discussion moderated by Martin Scholten (WUR), with:

[@mcthscholten](#)

Annika Thies & Josef Efken, Thünen Institute

[@Thuenen\\_aktuell](#)

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Florian Leiber, FIBL

[@fiblog](#)

## Welcome and Introduction



**Jean-Louis Peyraud (President of Animal Task Force, INRA)** welcomed all participants of the 8<sup>th</sup> Animal Task Force Seminar, introducing the Animal Task Force and outlining the programme.

The Animal Task Force (ATF) promotes a sustainable and competitive animal production in Europe. We are a public private partnership of experts from knowledge institutes and industry representative organisations from across Europe. We work closely together with EAAP on setting the European agenda for research and innovation in the animal domain.

For more information: [www.animaltaskforce.eu](http://www.animaltaskforce.eu)



## Introduction to societal expectations and policy making

*By Fredrick Federley, member of the ALDE Group at the European Parliament*

[www.europarl.europa.eu/meps/en/124989/FREDRICK\\_FEDERLEY/home](http://www.europarl.europa.eu/meps/en/124989/FREDRICK_FEDERLEY/home) @federley

Frederic Federley is Vice president of the Swedish Centre Party and Member of the European Parliament. He was elected 4.5 years ago on sustainability issues such as animal welfare, animal health and the issue of antimicrobial resistance. He is a member of AGRI, ITRE and ENVI in the European Parliament. *“We run a slow production, small scale farm with a small scale feed production striving to keep biodiversity and address desires from consumers”*. Frederic Federley sees an overwhelming trend in Sweden with people eating less meat, instead they eat meat of higher quality. This trend will induce changes in the way we handle livestock production. Livestock production needs a change for the future. We have gone too far in upscaling to massive production, mobilising high quality feed protein to feed animals. Consumers are more and more concerned about food impacts. They ask for high standards regarding animal welfare, sustainable production systems, and label of origin. This is not only good for the environment, but also for the farmers whose biggest issue today is that they do not get payed enough for the food they produce. At the same time, we have an increasing population to feed globally. This is why more efforts must be put into innovation, research and development, and transforming findings into viable businesses and business models. This is important in order to strengthen the European position on global markets. If we let research and innovations come from other countries, we are not setting the agenda and standards ourselves and we are therefore at a disadvantage competition wise.

## Questions:

Public: What is the self-sufficiency rate of Sweden?

Fredrick Federley (FF): *“We will starve within a few days” (laughs)*. We have the land area and possibility to grow production, but farmers are not getting paid enough for products. We need to go towards more market-based systems where consumers pay for what they are eating. We also need high education, training and technologies for farmers.

Public: I understand the need for farmers to be paid. When standards are higher, how to feed third countries with cheap animal products? Should we protect our production in EU until others reach same level of standards?

FF: I see different ways to achieve public protection: either we give more public money, or we build a common market based on common rules, looking at reciprocity in legislation when dealing with third countries (e.g. use of antibiotics in Thailand).

Public: European producers need to sell to third countries, to get value from parts of the carcass not valued in the EU.

FF: Some European countries are already good at exports. That couldn't mean lowering standards in EU, where wages and social security are much more expensive than in third countries. We will not be able to compete with Thai poultry on price, but we can compete with Northern American's on meat produced with low antibiotics and very high standards in animal welfare.

## SESSION 1: Animal production & planetary health

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### Animal farming for Humans' well-being and planetary health: observations at the global scale

By Pierre Gerber, World Bank

[www.worldbank.org](http://www.worldbank.org)

@WorldBank



Pierre Gerber is a Senior Livestock Specialist at the World Bank and Special Professor at the Department of Animal Sciences, WUR. Livestock farming is a globalizing enterprise having a large share in global trade, with impacts on the environment, but also on animal welfare, labour conditions, anti-microbial resistance, etc. Three sustainability fairy tales will illustrate livestock systems:

*“Ms. Hen, the efficient”*, valorises low amounts of high quality feed, with reduced pressure on the environment and high volumes of outputs. But applying industrial approaches to biological processes comes with challenges: high quality feeding puts strong pressure on land and water and competes with human food. Animals are bred to their physical limits, requiring the use of antibiotics. Natural resource use efficiency results in low costs of production, poor labour conditions and animal welfare, accelerated consumption trends, thus significant absolute impact.

*“Mr. Pig, adept of the circular economy”* valorises waste from the food industry and various by-products, transforms them into a value added product. But volume of production is constrained by input and output fluxes: production is limited in amount and geographically unbalanced, with effects on public health.

*“Mr. Cattle, the naturalist”* tends to maximise its integration in ecosystems, with a rumen that can process inedible feed, and a large genetic diversity to generate food, environmental, landscape and biodiversity services. But greenhouse gases emissions can be high, especially where C sequestration potential is low and the overall volume of production is limited.

On a global level, business-as-usual projections foresees that the systems represented here by Ms. Hen (i.e. industrial systems) will dominate production, accounting for 80% of growth by 2050. Improved sustainability of supply can however be reached by integrating the three approaches (technology, circular economies and integration in ecosystems) at local and territorial levels. Such production side improvement go hand-in-hand with demand side shifts, including the adjustment of animal based-food products in diets, in line with national dietary recommendations.

[More information in the slideshow](#)

## Environmental impacts, roles and services from livestock farming: current situation and avenues for improvement

*By Monika Zehetmeier, Bavarian State Research Center for Agriculture*

[www.lfl.bayern.de/verschiedenes/en/index.php](http://www.lfl.bayern.de/verschiedenes/en/index.php)



The speech has been prepared with Muriel Tichit, researcher at INRA, coordinator of the AnimalFuture EU project and Chair of Commission on Livestock farming systems of the European Association for Animal Productions (EAAP). Current scientific views on livestock impacts are very often narrow, focusing either on economics (cost reduction approaches, efficiency measurements), or on impacts on the environment like product-based Life Cycle Assessment. They often led to suggest cost-reduction measures and increases of animal productivity, without looking at side-effects, either positive or negative.

Different livestock systems provide a portfolio of benefits and costs that can be assessed with multi-dimensional and multi-level approaches. They help understand the socio-cultural and economic values of ecosystem services provided by agroecosystems. At farm level, trade-offs and synergies are numerous. They vary significantly across and within production systems, offering large avenues for improvement within systems. At regional level, we have to account for large heterogeneities across EU. The call for changes of current livestock systems requires targeted avenues for improvement together with a large set of innovations. But the consequences of innovations are still unknown. They need to be explored at multi-dimensional levels, as what works at a given level might not work at a different level. The AnimalFuture project aims to build an indicator based decision support system able to spot where innovations will be more effective.

[More information in the slideshow](#)



## Panel discussion

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**Moderator:** *Martin Scholten (MS) (WUR)* <https://www.wur.nl/en.htm> @mcthscholten



Production and consumption discussions are often separate. Today, we will try to link them up and see whether we can find the right balance: this morning, we will explore it from the production perspective, this afternoon, from a healthy consumer's perspective. Two pitches will introduce the discussion.

## Assessment of environmental impacts and services of animal food systems

**By Anders Henrik Herlin, Swedish University of Agricultural Sciences** [www.slu.se/](http://www.slu.se/) @\_SLU



Anders Henrik Herlin holds a position as a senior lecturer “collaboration specialist”, aiming to improve relations with stakeholders and society. Food systems are complex and multifunctional. The ambition “to save the planet needs change food systems” requires reliable metrics to inform policy making.

Current methodologies are often not sufficient to evaluate food systems impacts. Their limits are not properly communicated and still, they are used by policy makers.

Most of them, like the Life Cycle Analysis, are based on mass based “functional units”, that are one-dimensional and finally not useful. Calculations of the carbon footprint based on protein content overlook the amino acid profile of food, carbon sequestration in soils or the farming contribution to biodiversity. Other assumptions, considering the nutrient density when comparing milk to vegetable drinks, will lead to far lower climate impacts for milk. Soil biology and soil carbon is not properly considered neither, while it is crucial for the sustainability of agricultural land, with impacts on soil fertility and structure, water holding capacity, drought resistance, resistance to erosion, carbon sequestration... meaning that we should consider the loss of soil carbon in soils of importance when comparing only crop production with crop rotations with temporary grasslands and animals.

Systems modelling for the future has the potential to encompass holistic approaches looking at how things are connected and considering dynamic processes. They should be able to provide multidimensional outcomes. Finally, we should be aware that “No soil means no food” and “biodiversity is more important than you think”.

[More information in the slideshow](#)

## What is the Safe Operating Space (SOS) for EU livestock?

**By Erik Mathijs, Katholic University Leuven** [www.kuleuven.be/english/](http://www.kuleuven.be/english/) @erikmathijs



Erik Mathijs's research focuses on the transformation of agricultural and food system towards sustainability and resilience from a socio-economic point of view. He has contributed to the study released in September 2018 by the RISE Foundation [-link](#). The study was conducted to provide a framework for discussion on the protein transition, to enable actors and policy makers to explore where they should put investment. It started from the environmental boundaries and the Doughnut approaches, applying the concept of Safe Operating Space (SOS) for EU livestock.

Looking at the overwhelmingly critical literature of linear studies, the central idea is to consider benefits and negative impacts with regards to environmental limitations and social needs.

It concludes that EU livestock is not in a SOS and calls for public policies to rebalance livestock in the EU, both in production and consumption. To reduce negative impacts from production, resource efficiency, manure management, reduction of density and concentration, technologies and innovation can help, but they will not be sufficient in the EU context to support a transition. A shift in consumption is required, pertaining a change in the species balance of consumption, substitution by new protein sources, change in diet to less protein and more plant-based proteins.

[More information in the slideshow](#)

### Discussion, moderated by Martin Scholten, with:

- Florian Leiber (FL), Head of the Department of Livestock Sciences, Research Institute of Organic Agriculture FIBL, Switzerland <https://www.fibl.org/en/> @fiblog
- Karl Schedle (KS), pig farmer and scientist at the University of Natural Resources and Life Sciences, Vienna (BOKU), Austria [www.boku.ac.at/en/](http://www.boku.ac.at/en/) @BOKUvienna
- Anders Henrik Herlin (AHH), Swedish University of Agricultural Sciences, Sweden
- Erik Mathijs (EM), Katholic University Leuven, Belgium
- Pierre Gerber (PG), World Bank, US
- Monika Zehetmeier (MZ), Bavarian State Research Center for Agriculture, Germany



### What are your comments on the presentations?

- FL: Looking at the figures Monika presented on the trade-offs between cattle GHG emissions and milk yield, the amplitude across or within systems could be minus -20%. Enhancing efficiency may cost a lot of efforts to finally only improve from -20%. Wouldn't it be easier to reduce demand by -20% in European diets, fitting very nicely nutritional recommendations? From the production side, when will we implement what we know from research and assessments? We have been aware of the feed vs food competition for years. We are staying in the comfort zone. When I tell one day to students they should reduce meat demand, the next day, I have Swiss organic pig producers in front of me and I must ask them to reduce the offer. We need a discussion on the production side about reduction. Growth should come from quality.
- KS: As a producer of pigs and laying hens, I'm struggling to increase efficiency, improve feed ratio and save natural resources towards sustainability. We have reduced the use of feedstuff in competition with human food. We are trying to increase dietary fibre content and for a healthy sustainable animal production.



Public: We should not think too simplistic. The roadmap should not be a mix of black and white but rather be a colourful picture. I would recommend, while looking at food systems, not to look at animal system separately. We need a whole food system analysis.

Public: Production can improve, it has already improved a lot using a multi-actor approach. As an example, Denmark has reduced its N surplus.

Public: I used to work in dairy farms. We were facing environmental issues, among other problems. Are we thinking of long term issues, like replacement of farmers?

### **How do you see the balance at animal-plant production?**

FL: We should look at systems that are efficient and successful. Organic agriculture is a driver for change for all systems. It very often combines and integrates successfully animal and crop production. I'm not saying it's the only way, but we have demonstrated it works. We don't have to wait until we analyse the whole systems. We have to implement changes now.

### **Organic production in niche. When rest of production goes into this direction, what is left for organic farming?**

FL: Organic farmers are pioneers. Organic agriculture is globally one of the most acknowledged quality certification systems, *but it is not the only way to address ecological issues.* The organic sector should not be afraid of competition.

### **What can circularity bring?**

AHH: We need a system thinking, farmers are used to it. Now we need to upscale it much more. We can put the processes in a computer and calculate how farmers are doing. We have much available data on farm, including precision livestock farming for monitoring resources. We would need to design incentives, maybe a taxation system or a grant system encouraging farmers to store carbon in the soils. Technology could help to move from production efficiency to more ecological efficiency, especially in bigger farms.

EM: I'll be pessimistic and provocative. Circular economy is fine when incentives are well designed to reach the intended consequences. Incentive structures are very difficult to implement within 28 member states, in a multi-lateral world free trade against us. Politicians say they are looking for more protection, but in reality they are not doing that. There are already actors leading the way. The issue of diversification is very important, we see some labels supported by supermarkets. Good examples need to be shared.

### **The RISE report indicates the situation of imbalance is quite alarming. Can we wait?**

PG: Coming back to Florian's starting point on graph presenting the relation between emission intensity and productivity, one needs to keep in mind the amplitude across systems, at global scale. Productivity gains do generate much greater emission intensity reduction at low yields than at high yields. Interventions (for mitigation or other aspects of sustainability) need to be tailored to specific conditions.

MZ: Our research shows that there is an urgent need to rebalance marketable and non-marketable outputs from livestock farming systems.

EM: The next CAP will provide incentives on this issue. We have been thinking too much to produce commodities, not enough in a systemic way.

### **How can technologies support the adaptation of livestock farming systems?**

Public: Technologies can help improving efficiency, delivering information, exchanging knowledge, etc. Via their smartphone, farmers can access more information and make more informed decisions.

EM: Challenges are so great that not all can come from technologies. Very often, the potential of technologies are overestimated. We also need behavioural changes.

FL: We have a project in Kirghizstan about pasture management, EU funded. They have considerable grassland resources, which are however poorly utilized. When we say that grassland can contribute to solve food production ecology problems, we have to take into account, that the potentials are far not realized. For social and political reasons, central Asian regions have way too high overstocking with animals. But they need very strait and practical management tools, which are globally available to solve these problems, not genomics. Huge issues can be solved by just implementing good practices and simple tools that are not necessarily technology driven.

KS: Technologies are much useful in precision feeding to save resources while fitting the appropriate nutrient content. They can also support processing of waste into feedstuff or to improve their nutrient value and use higher qualities of new feedstuffs not in competition with human food.

### **What would be your recommendations on indicators about the sustainability of feed production and sustainable feed security?**

FL: One indicator for sustainable ruminant production is a low feed-food competition. This can be reached by restricting concentrate allowances to ruminants. This is not necessarily a top-down decision. For instance, in Switzerland, the organic system is driven by farmers. Decisions on feed concentrate allowances are made by farmers in a democratic way. By this way, the farmers are the drivers and not the driven

### **Do we have a fair assessment of livestock systems?**

Public: I miss research in social science in the panel. We have heard a lot about consumers. Can we quantify the demand for organic products and higher standards?

Public: Comparisons in LCA are not fair, we need a fair assessment of red meat.

AHH: Allocations to establish the carbon footprint is a huge theme raising more questions than answers.

Public: On the production side, I see the importance of quality, on the consumption side, the importance of health. How can quality drive systems?

## **SESSION 2: Healthy diets, rural development and economics**

### **Risks and benefits from animal products and their substitutes: Vision from nutritional science**

*By Edith Feskens, WUR*

[www.wur.nl/en.htm](http://www.wur.nl/en.htm)

[@edithfeskens](https://twitter.com/edithfeskens)



Edith Feskens is Professor in Nutrition and Health over the Lifecourse, Wageningen University and Research. She is a member of the Scientific Advisory Board “Diet related to Chronic Diseases” in the JPI HDHL (a healthy diet for a healthy life).

The animal produced intake is increasing worldwide, especially in transition and developing countries. In Netherlands, dietary recommendations established after the Second World War famine have completely changed recently towards more vegetable protein and animal based foods. Nutrition science has changed a lot. In the US, a consultation on priorities for cardiometabolic health pointed certain categories of foods that should be increased or reduced in the

diet, pointing at processed meat, among other foods. However, cardiovascular diseases are multifactorial and they have massively declined from all over the world, while cancers and obesity are developing fast. Red meat and processed meats are classified as (probably) causing cancer, depending on quantity absorbed.

At global level, protein energy malnutrition and micronutrient deficiencies in iodine, iron, vit. A, Zinc that can be found in some animal-based food have to be carefully considered as they are causing children stunting and undernourishment. Protein requirements vary across populations. They are higher for elderly, even higher in case of stress or trauma and high protein diets may have benefits for weight loss. Not all proteins are equal in terms of digestibility and amino acid composition. Beef, eggs, casein and milk have digestibility assets compared to crops or grains. Substitutes provide a various range of benefits, with a lower protein quality, except for soy, but some may contain salt or sugar that should be limited. Finally, animal products are an essential part of the diet. In Europe, we eat generally more than recommended, except for elderly. It is very difficult to define the optimal ration animal vs. vegetable proteins as it varies according to the food source used.

[More information in the slideshow](#)

### Questions

Public: About the diet shift to legumes, it seems carbohydrates in our bodies don't have enough bacteria, which may create problems in our gut.

EF: Bacteria are potentially helpful, they have been heavily studied. Legumes are healthy, but some side effects may not be so nice. They are probably beneficial for gut health. You can treat legumes to avoid anti-nutritional effects.

Public: Which components of processed meat cause health problems?

EF: Nitrites and salt are the main problems. It is suitable to think of alternatives if possible, but nitrites and salt have food safety assets.

Public: We have to be aware of inflammatory processes, but also of atherosclerosis in people who don't eat meat. We have to eat meat and take care how we process it.

EF: For concerns related to health and sustainability, we should look at intake. Flexitarian eating meat 5 times per week in total is good, they have the benefits of meat and taste. We are not rational consumers, we like food. People often don't eat according to nutritional guidelines.

## Importance of livestock farming for the development of rural territories in Basque Country: strategies and action plan

By Karlos Mas, Lorra S. Coop

[www.lorra.eus/es/](http://www.lorra.eus/es/)



Karlos Mas is a Management technician in Lorra S. Coop, an agricultural cooperative. His main job is to assess the farms and make a bridge with public institutions and policy makers about the situation and needs of farms and farmers. Livestock farming has a strategic role in the Basque Country, as part of an ecosystem of actors involved in food production, services, farms. Products are quality oriented, with local and regional certification, short supply chains, urban-rural linkages, and good perception and acceptance from consumers. Socially, it benefits to cultural heritage, tourism, landscape and rural population maintenance and vitality of territories.

The primary sector, including the livestock sector, is very important, as the first link of a food value chain that is strategic in Basque country, representing 10.6% of the GDP. The region has an objective for food and gastronomy to reach 12% of the GDP. A new policy aims to increase production and consumption of local products with distinctive quality, safety and sustainability attributes, connect producers and clients, valorise the Basque Country Brand, improve competitiveness with innovation and cooperation, generate sustainable employment in the food chain and fix people in the region, increase social well-being and quality of life... The policy encompasses several working areas like support for SMEs, internationalisation, technologies and knowledge development, culture and training, strategic investment, public-private cooperation.

[More information in the slideshow](#)

### Questions

Public: What is the connection between livestock farming and other activities like tourism, rural vitality? What may be the consequences on economy of the territories when tax are put on livestock consumption?

KM: Food Chain is the 11% of the GPD. I'm quite pessimistic on the possible consequences of a taxation.

## Panel discussion

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MS: We wanted to have a speech from retail here, but unfortunately our Serbian guest could not manage to be with us. Let's see if we can bring this point into the discussion.

## Economic consequences of different scenarios of animal production in Europe

*By Josef Efken and Annika Thies, Thünen Institute of Market Analysis*

[www.thuenen.de/en/ma/](http://www.thuenen.de/en/ma/)

[@Thuenen\\_aktuell](#)



According to FAO, as opposed to global meat production that has increased a lot, meat consumption has been slightly decreasing or stagnating in kg/cap in countries like UK, France, Germany, Italy or Poland. But looking at meat consumption in the EU in more details, Joseph Efken and Annika Thies consider we need more data to estimate the actual consumption of meat. They call for being careful in

building policies and strategies. In Germany, consumer behaviour looks heterogeneous, and there is no "average consumer". The meat demand is particularly important in populations from 15 to 65 years old. Baby boomers now go to ages where consumption goes down. Gender plays a big role, female eating remarkably less than male. Across EU countries, diet composition in species can be very different.

Looking at the chicken case, we see that less and less of the animal is eaten in Europe. Mainly precious pieces are consumed. What happens to the rest of it is difficult to estimate. There is a lack of information on human intake. Interviews conducted within the German national nutrition survey show an important discrepancy between what people declare they eat and estimations of human intake. Coefficients to allocate consumption of meat across the different usages are obsolete. This raises issues in terms of sustainability and on the evaluation of a good balance between production and consumption, as well as in the development of realistic scenarios and of policies that they recommend should consider consumer sovereignty and avoid the benevolent dictator model.

[More information in the slideshow](#)

### Discussion moderated by Martin Scholten, with:

- Edith Feskens (EF), WUR
- Karlos Mas (KM), Lorra S. Coop
- Annika Thies (AT) & Josef Efken (JE), Thünen Institute of Market Analysis
- Florian Leiber (FL), Head of the Department of Livestock Sciences, Research Institute of Organic Agriculture FIBL
- Karl Schedle (KS), pig farmer and scientist at University of Natural Resources and Life Sciences, Vienna (BOKU)



### *Reactions from discussants*

- KS: Inuits have shown that a healthy nutrition with a lot of products of animal origin works. In nature, people are not vegan. It has been proved difficult to get a correct nutrition on a vegan basis. We should not think black and white. Regional products are starting, “meat from Austria” is a new trend from the marketing side that works at the moment.
- FL: We have lost the battle about rural culture in Germany where I was born. Winners have become families able to increase land and amounts of pigs or cows. What has built the culture has gone. We have lost the landscape and cultural relationship between human beings and livestock. We eat because we like to eat, but how the food was produced is also important. What do we do to our cultural and mental health by developing our animal production in some directions?

### *What do you think about the figures presented by Annika Thies and Josef Efken on data on meat consumption?*

- FL: I was surprised to hear that German people were eating according to recommendations, and also about the high losses in production.
- JE: We should be careful when we use production data. We lack information. We have to collect data and analyse it. We have a project to get reliable data on consumption.
- Public: There are trends. In the past, we used to eat more offal, nowadays there are a lot of losses, except in China. We should consider the importance of trade. Chinese people eat everything, chicken breast going to pet food in China...
- MS: Maybe the retail industry has much more data.



AT: This discussion on methodology is problematic. We should speak to the slaughterhouses, meat processors ask where they send their meat.

### ***Are interviews a reliable methodology?***

Public: Consumers are heterogeneous, I'm missing recommendations in terms of data collection about consumption: surveys, coefficient estimations, what is your preferred method? I would suggest to compare different methodologies and look at bias.

JE: Nutrition is a big point in society and science. We do not have enough science, the scientific community and public money should go into this direction. We have good statistics on production, not on consumption. National nutrition surveys are costly, and lacking coordination between countries.

EF: I recognise the bias in using interviews. In the Netherlands, regular nutrition surveys are representative but based on interviews. We use mean values. Personal perception of intake is variable: usually, the heavier you are, the more you think you eat. Another approach is to use small groups. We are trying to develop apps to get a better picture.

PG: We are struggling on global scale to find reliable data. Animal numbers present a lot of unknowns at world level. We make estimations from assumptions, using averages over a long period and estimates. All the more on feed, that is a very important aspect for sustainability assessment.

### ***How to communicate recommendations to the general public?***

Public: In the Netherlands, people don't follow recommendations, they are not aware of what food contains.

EF: In general, people think I'm oriented. There are all kind of hypes. Recommendations do not meet people's feeling of "being special", it's about personal and cultural identity. Food habits are difficult to change. Personal guidelines are often based on local habits. Recommendations on nutrients levels are similar across the EU, but their translation into food-based guidelines differs very much between countries.

JE: Communication with the general public is not so easy. In Germany, there are headlines on "German eat too much meat".

### ***What is the importance of livestock for rural communities?***

Public: I don't believe we've had cultural loss, but we got different kinds of cultural gains.

Public: The situation is totally different across countries in Southern vs. Northern Europe. In intensive systems, livestock creates employment and jobs in rural areas. For example, Brittany has become one of the main regions to produce pigs, dairy, eggs, in the early 1960s, intensive farming has enabled to maintain children in small farms, increase margin. Off course there are problems of nitrification of water and green algae due to an excess in concentration. In other regions, we have extensive livestock farming where we cannot produce anything else. In those areas, new value chains with AOP can develop to maintain activity.

Public: In Turkey, in the 1950s and 1960s, people have left rural areas. Now, people are going back to start livestock production, vegetables or vineyards. The rural culture has changed significantly as production is very different. There will be a return in the EU. Rural areas are very different across countries, they become attractive when people want more connection with soil, animals, nature.

MZ: Austria and Germany regional organic production have been promoted by retailers. Now, we have to link them to indicators. In the long run, consumers require labels connected to higher quality.

- MS: In the Netherlands, I see a strong trend towards regional consumption, very different from 10 years ago. It has become more and more mainstream because young people want a reconnection to countryside. Netherlands is a metropolitan country. Farmers may try to find models to make money, sell food with a good story around the territory, the pig or cow, about the diversity in it... this is one of the key elements for our future food systems.
- KM: We need livestock farming, otherwise people will be leaving to big cities. We can improve production efficiency, sell local and sustainable products. We have to educate European producers to focus on products quality. Communication is getting better, the offer has changed for 20 years. We should provide information on our products and improve their economic, environmental, social sustainability.

### ***What is the role of products quality? What are qualities associated to rural development products?***

- KS: Nutritional quality is a strong element for differentiation. It's different from technological quality.
- MS: Parma and Iberico processed meat pigs are regional products that have a story. Are there options for more regions to come up with new products? Emotion is also something that can make money.
- JE: A famous product can save a region.
- FL: This morning, we have addressed global and environmental questions issues. Now, we are on the local frame. I like it but I doubt that with local solutions we will solve large-scale problems. I'm somehow puzzled in front of the broad bench of problems of very different sizes, but on the other hand this is the very exiting task of livestock sciences.
- MS: We need a mix of solutions. The more diverse the diet is, the more healthy. As an ecologist, I think the more diverse the planet, the more resilient. We have to work with that kind of principles, find a mix of ways to meet sustainable use of resources, having a food system that supplies with nice, healthy, emotional food, with good stories. The more uniform the story, the less interesting.

### ***What do you want ATF to work on for the next year?***

- Public: We have global problems. Who can solve them? Politicians have to take responsibility to make rules to steer production and consumption. Consumers have to choose how to eat, what to buy. Producers choose their models of production. There is global responsibility and individual responsibility.
- Public: Be very cautious with the price of food. We should focus much more on farmers' revenue, thanks to a combination of subsidies (see protests against diesel taxation in France).
- AHH: I appreciate regional foods like in the Basque region. My wife ran a project on the regional food characteristics including landscape character and cultural identity which are important to preserve but also to market which means strategies and measures have to be taken to develop this. Sweden has lost a large part of its semi-natural pastures – with the biodiversity and it hampers rural development, food production with landscape values, even if there are some good examples of regional food profiles.

## Closing remarks

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*By Jean-Louis Peyraud, ATF President*

I would like to add some white spots to the discussion that are also research and innovation gaps:

- How do we evaluate the consequences of production/consumption-driven scenarios on GHG emissions mitigation, biodiversity, landscape...?
- Performance of livestock systems are not well studied.
- Healthy diets are associated with less environmental impacts... but environmental impact vary according to substitutes.
- An important starting point is a nutritionally balanced diet, off course, but pleasure is also important.

Some messages that ATF will take up from the discussion:

- In trying to manage agriculture to feed the European population, how do we achieve a win-win situation?
- Production-consumption, trade and rural development should be considered simultaneously.
- Increasing the demand for a specific food will increase its price.
- We need to consider simultaneously plant and livestock production and the whole food chains in a circular way. Consider more closely the role of industry and retail and farmers.
- To lead a transition, we need public policies, but they are very difficult to fine-tune and implement. What is more efficient: a tax on meat or subsidies towards the delivery of ecosystem services? How to justify them to citizens?

## Save the date of the next ATF events:

- **7<sup>th</sup> ATF-EAAP Special session, Ghent, Belgium**      **End August, 2019**
- **9<sup>th</sup> ATF Annual seminar, Brussels – Belgium**      **06<sup>th</sup> November, 2018**