



Towards climate smart European livestock farming

 [#ClimateSmartLivestockFarming](https://twitter.com/ClimateSmartLivestockFarming)

Animal Task Force & EAAP 7th Special Session
Monday 26th Aug. 2019 13:55 - 17:15
EAAP Annual Meeting 2019 - Ghent, Belgium

Session report

TOWARDS A CLIMATE SMART EUROPEAN LIVESTOCK FARMING

Animal Task Force & EAAP 7th Special Session
EAAP annual meeting 2019
August 26th, 2019 – Ghent, Belgium

[Table of contents](#)

Welcome and Introduction	5
Setting the scene	5
A European policy maker’s view: Climate impacts from livestock and development of effective EU policy.....	5
Can we achieve climate targets avoiding trade-offs with biodiversity and resource efficiency? Views from the Ten Years for Agroecology scenario (TYFA).....	6
Implementation of climate mitigation options	7
Farmers committed to achieving mitigation targets via the adoption of innovative best practices	7
Industry committed to achieving mitigation targets.....	8
Climate Smart Circular Food Systems	9
Improvement of evaluation methods.....	10
LEAP Partnership, building consensus on methodologies for the assessment of environmental performance of livestock supply chains.....	10
PANEL DISCUSSION	11
Closing remarks.....	14

The EAAP and Animal Task Force (ATF) Special Session during the EAAP Annual Meeting aims to bring together animal science with practice of animal production and connect researchers, policy-makers, industry representatives and societal organisations. Every year, a different topic is addressed in this half-day session. This year, we want to address the topic “**Towards a climate smart European livestock farming**”.

Background

International climate agreements, like COP21, have initiated a new era for climate policies. The livestock sector has potential to contributing to mitigating climate impact. In the EU, the sector accounts for 40% of global agricultural emissions or 7% of total emissions, producing about 2,400 Mt of CO₂ equivalent annually, but also methane and NO₂. Enteric emissions, emissions from manure and land use change (LUC) due to deforestation for feed production are among the principal contributors.

Thanks to significant efforts, the livestock sector in Europe is starting to contribute to mitigation of climate impacts (SDG 13). R&I, new technologies and relevant incentives to implementation of best practices may enable the livestock sector to come close to CO₂ neutrality for monogastrics and to achieve a 40% reduction for ruminants. Ways to proceed include e.g. implementing mitigation options and enhancing carbon storage under grasslands soils.

Climate targets should be integrated into a holistic approach to avoid trade-offs and foster a sustainable use of resources, preservation of biodiversity and improvement of soil quality. Future solutions need to optimise multiple factors through a systems approach, which takes into account the interplay between the system components.

Format of the 7th EAAP & ATF Special Session

The session would like to engage discussion with farmers, industries, scientists, policy makers and with the society. Most important findings will be discussed with a panel. The outcomes of the session will be discussed with a large panel of European stakeholders during the **ATF seminar, in Brussels, on 6th Nov. 2019.**

Aim

The Special Session aims to contribute to:

- **Engage a dialogue with various stakeholders;**
- **Support knowledge development and innovation, foster ownership by farmers and industries;**
- **Address how research and innovation can help the livestock sector;**
- **Provide input to European research and innovation agendas and to public policies to secure Europe’s role as a leading global provider of safe and healthy animal-derived products.**

PROGRAMME

13:55 Welcome and introduction

Jean-Louis Peyraud, ATF President & Matthias Gauly, President EAAP

SETTING THE SCENE

14:00 How to estimate climate impacts and potential for mitigation?

Simon Kay, European Commission / DG Clima

14:15 Can we achieve climate targets avoiding trade-offs with biodiversity?

Sébastien Treyer, IDDRI

14:30 Discussion

IMPLEMENTATION OF CLIMATE MITIGATION OPTIONS

14:45 Farmers adopting innovative best practices

Josselin Andurand, IDELE

15:00 Industry committed to achieving mitigation targets

Charlotte Thy, Danish Crown

15:15 Options at system level & expected mitigation potential

Martin Scholten, Global Research Alliance

IMPROVEMENT OF EVALUATION METHODS

15:30 Building consensus on methodologies for the assessment of environmental performance

Camillo de Camillis, FAO, LEAP Partnership

15:45 Coffee break

PANEL DISCUSSION

16:15 Panel Discussion: ways forward, R&I

*moderated by Vivi H. Nielsen, Aarhus University
with audience and:*

- *Simon Kay, DG Clima*
- *Josselin Andurand, IDELE*
- *Jabier Ruiz Mirazo, WWF*
- *Sijne van der Beek, CRV*
- *Monika Zehetmeier, LfL*

17:15 Closing

Welcome and Introduction

The ATF Chair Jean-Louis Peyraud and EAAP President Matthias Gauly opened the ATF & EAAP 7th Special Session.

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.

Livestock is often blamed for its contribution to climate warming. It is challenged by the COP21 agreement and again recently by the last IPCC report. But livestock is also part of the solution towards a climate smart agriculture. Today, we want to discuss: “What is the real contribution of livestock to climate change? Do we use the right metrics to evaluate the carbon footprint of animal products? What are the mitigations options and the consequences of these options on the other services provided by livestock farming?”

For more information:

www.animaltaskforce.eu

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

www.eaap.org/

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

Setting the scene

A European policy maker’s view: Climate impacts from livestock and development of effective EU policy



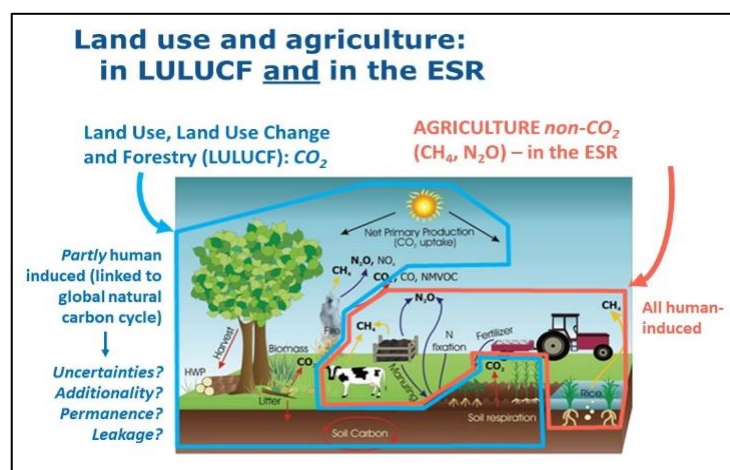
By Simon Kay, European Commission – DG Clima

https://ec.europa.eu/clima/index_en

[@EU Commission](https://twitter.com/EU_Commission)

Simon Kay holds a PhD in Geography from University College London and is today Senior Expert in European Commission’s Directorate General for Climate Action. His work is focused on the development of policy in relation to agriculture, forestry and other land use and the EU's climate objectives.

He introduces fluxes related to climate impacts from agriculture (non-CO₂) compared to land use, land use change and forestry (CO₂). It is estimated that a total of 380 MtCO₂ is emitted by livestock, representing about ¾ of that of cars and light vehicles. The 2030 climate and energy framework adopted in 2014 sets out EU-wide targets and policy objectives from 2021 to 2030. Among other key targets, at least 40% of greenhouse gas emissions should be cut (from 1990 levels). EU agriculture’s non-CO₂ emissions fall under non-ETS (Emissions Trading System) sectors with a -30% target. This has been translated into individual binding targets for Member States. Two EC policy documents were published in Nov. 2018: “Communication on the proposed Long Term Strategy” [-link](#) and the related “In depth Analysis” = [link](#). Using internationally agreed standards, they include projections



per sector and scenarios for land use and biomass production. In Dec. 2018, a regulation adopted by the Parliament and the Council set out national GHG inventory reporting templates and a framework for national policy development. Climate targets are embedded in the CAP, representing 40% of the budget. The range of mitigation options in agriculture is presented on slide #11.

Questions

Public: You have made a review of 28 national strategies. What have you seen in terms of proposals from livestock sectors?

SK Few National draft plans go beyond usual measures and we still need a very good information from livestock science in this area.

Public: Where is energy production for agriculture counted?

SK It is counted in the two different policy pillars, ETS and ESR.

Public: What methodologies do you use to compare emissions from cars and light vehicles with that of livestock? Do you use Life cycle analysis?

SK: Noting that I am not a specialist on vehicle emissions GHG inventory, emissions from transport are estimated mainly based on fleet information and the use of fuel. LCA is not really a good tool for assessments in current inventories. Inventories should nevertheless be comparable.

[More information in the slideshow](#)

Can we achieve climate targets avoiding trade-offs with biodiversity and resource efficiency? Views from the Ten Years for Agroecology scenario (TYFA)



By Sébastien Treyer, IDDRI

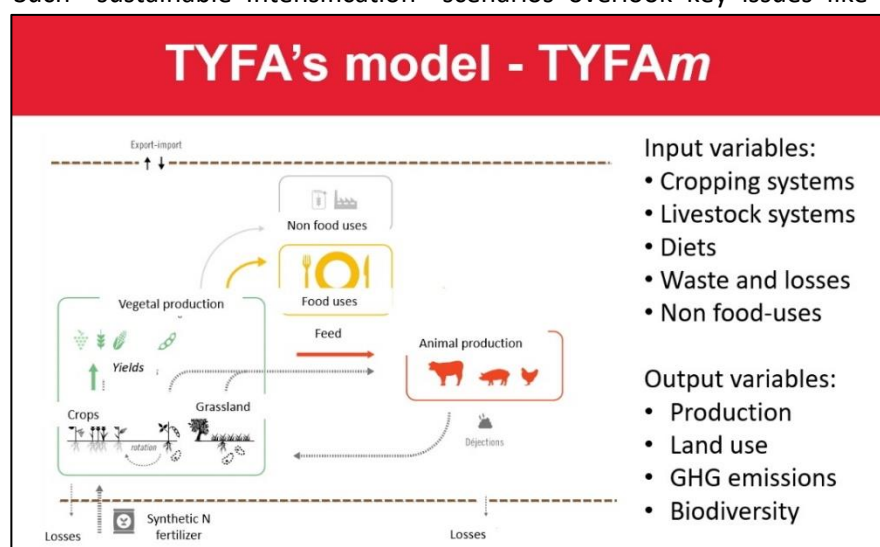
www.iddri.org

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

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

Sébastien Treyer is a graduate from Ecole Polytechnique and AgroParisTech, and holds a PhD in environment management. He is a specialist in foresight for public policies and international negotiations on sustainable development, now Director of programmes at IDDRI.

TYFA is a foresight study aiming to design an agenda for a 10 years transition towards agro-ecology in Europe. It is based on a biotechnical modelling and study of socio-economic aspects. The policy debate is structured around two narratives: a productivity oriented smart agriculture narrative vs. a climate smart agriculture narrative. Such “sustainable Intensification” scenarios overlook key issues like pesticides, biodiversity, landscapes, climate adaptation, agro-ecologic infrastructures, crop-livestock interactions, food quality, and socio-economy. TYFA scenarios explores feasibility and conditions of a upscaling of agro-ecology. Main hypothesis build around fertility management at territorial level, pesticide free and extensive crop production, redeployment of permanent grassland,



livestock extensification, cascading approach on the use of biomass. TYFA scenarios are positive to GHG emissions (-40% GHG) and to biodiversity remediation. Getting there implies a 40% reduction of animal production (in tons or calories) thus representing - 25 % of ruminants population and - 50% for monogastrics population), moving away from large scale animal farming and replacing it with agro-ecological livestock. This includes keeping a sufficient ruminants population to support agro-ecological infrastructures, with a trade-off between the reduction of ruminants, climate and biodiversity.

Questions:

Public: Is Genome editing considered in the scenario?

ST: TYFA has not captured this element. It may look like a non-innovation scenario, but it is not.

Public: What is the role of pigs and poultry in your scenario?

ST: To reduce the amount of crops produced to feed animals, the scenario assumes a decrease in monogastrics, unlike other scenarios.

Public: Looking at tendencies in meat consumption, there is a current decrease in red meat, an increase in poultry meat. Your scenario states the reverse.

ST: Our scenario puts a lot of emphasis on ruminants thanks to their agro-ecological services.

[More information in the slideshow](#)

Implementation of climate mitigation options

Farmers committed to achieving mitigation targets via the adoption of innovative best practices

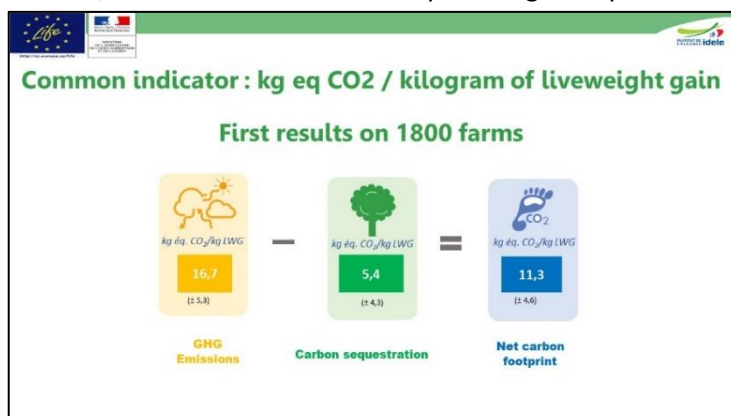


By **Josselin Andurand, IDELE**

<http://idele.fr/>

[@InstitutElevage](#)

Josselin Andurand is an engineer specialised in beef systems and environment at the French Livestock Institute (Idele). He is coordinating the Life Beef Carbon project. This Life Plus project aims to implement coordinated national GHG emissions mitigation action plans across four countries: France, Ireland, Italy, Spain, including carbon sequestration. Over the period 2016-2020, project partners and stakeholders have collectively committed themselves to reduce the beef carbon footprint by -15% across 2,000 farms. The project has built a common framework on GHG including tools for comparison and harmonisation and performed an inventory of mitigating practices at farm level across countries. It has set up a common indicator quantifying GHG emissions, carbon sequestration to calculate net carbon footprint per kg eq CO₂ per kg of liveweight over 2,000 farms of an environmental multi-performance European farm observatory. Measurements show a large intra system variability. 170 farms were chosen to apply best practices, demonstrate the feasibility of mitigation practices in real conditions and rank mitigation practices according to their mitigation potential. The set-up is now being deployed into four national carbon action plans involving stakeholders (value chain organisations, cooperatives, farm advisory services, chambers of agriculture, farmers associations, industries...) and will soon include financial reward via Carbon credits and environmental services. The use



of metrics enabled to adjust advisory services and improve technically the farms that show a huge diversity.

Questions:

Public: Carbon sequestration diminishes in time, how to discuss it with farmers? In the long term, you should think of other mitigation strategies.

JA: The methodology retains an average of carbon sequestration per ha grassland and hedge rows. Farm advisory tools have to be simple. Of course, main mitigation gains have to focus on emissions.

[More information in the slideshow](#)

Industry committed to achieving mitigation targets



By Charlotte Thy, Danish Crown

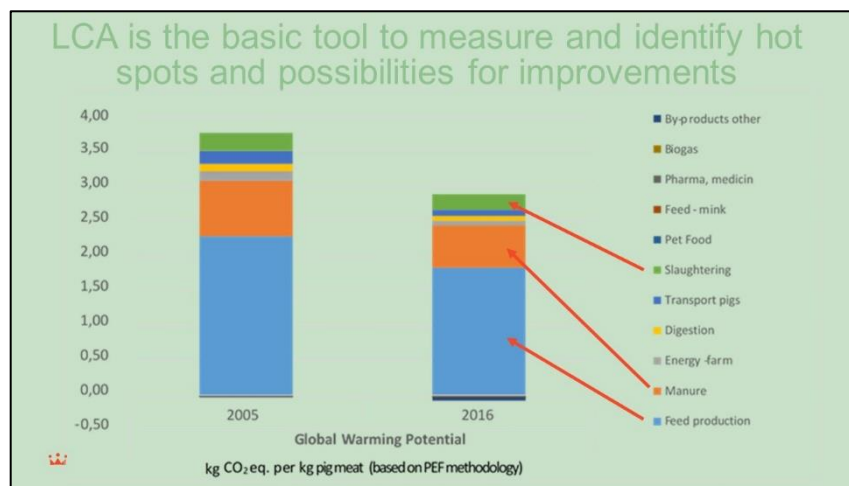
www.danishcrown.com

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

Charlotte Thy is sustainability director of the Danish Crown Group. During the last decade, she has both been setting the course for the environmental and climate change strategies at group level as well as being in charge of the implementation at the Danish slaughterhouses, meat processing plants and tanneries.

Danish Crown is a coop owned by Danish farmers that has developed worldwide. Global warming is one big challenge and the company is deploying a sustainability plan over the whole value chain to reduce greenhouse gas emissions by 50% by 2030 and reach climate neutrality by 2050. They don't really have customers asking us them do this. Within Danish Crown, farmers have built a strong collaboration with processors, abattoirs and after a co-creation process with NGOs, launched a voluntary certification scheme that includes climate mitigation and energy, antibiotics, animal welfare, innovation, cleaner technology. Farmers receive advice from Danish Crown on resource optimisation.

Climate mitigation and energy are major levers towards sustainability. At present, Danish Crown wants to accelerate the process. This needs further cooperation based on a dialogue between farmers, processing, sales, retail, society, research. Horizon Europe is a good opportunity to move forward.



Questions:

Public: Big compliment for such an initiative. How do you deal with the feed vs. food competition? With waste?

CT: We rely very much on Danish breeding programmes and a good pig genetics.

Public: Retailers are active in sustainability efforts. Do you see differences across EU countries?

CT: Yes, I see differences across countries. Meat commodity has been traded around the world. Shelf life related to food safety and cooling is still determinant. Retailers need to get married with producers to buy some cheap meat.

[More information in the slideshow](#)

Climate Smart Circular Food Systems



By Martin Scholten, WUR, Global Research Alliance on Agricultural (GRA) on Greenhouse gases

<https://globalresearchalliance.org/> / www.wur.nl/en.htm

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

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

Dr. Martin.C.Th. Scholten is an ecologist by background, active in the field of agro-sciences. He is member of the Board of Directors of Wageningen University & Research, responsible for Animal Sciences, Livestock Research, Bioveterinary Research and Marine Research. He is past-president of the Animal Task Force and co-chairman of the Global Research Alliance (GRA) on agricultural greenhouse gases.

This is a timely discussion considering the IPCC report on land use ([-link](#)), Eat Lancet, CGIAR and FAO publications addressing the role of livestock in the future. There is an overall agreement that livestock farming of the future will not be the same. Looking at the qualitative way to improve livestock farming and address the challenges of food security, climate change, use of resources, you need us, scientists across the world, to help bring concerns into advantages! Circularity allows the connection between food security and resource security, towards optimised use of resources, no waste of biomass, valorisation of biomass as coproducts, interconnected integration within food systems. Direct mitigation options combining tools, especially genetics, feeding, microbiome... would allow for a -50% reduction of greenhouse gases from livestock (see publication SAI platform and GRA [-link](#)). Debates focus on methane, but attention, we should also look at the time cycle of methane and CO₂ in the atmosphere and try to find an equilibrium.

Indirect mitigation options focussed on carbon sequestration would allow for a further +40% reduction. An implementation of a combined set of practices within circularity principles, for example in The Netherlands would allow a drastic reduction of net emissions, addressing the commitment of the COP21 Paris Agreement. This has led the Global Research



Alliance on Greenhouse Gases to work within a task force to develop a flagship proposal on circular food systems to improve food security with lower GHG emissions by circularity across the entire agri-food system with an economy based on by/co-products.

Questions:

Public: How do you consider the consumption level?

MS: We mostly look at optimisation of production. Consumption can be higher if the system is more resource efficient. The only way to find higher levels of livestock production is when livestock fits its role in circular production system. The system is resource use efficient because there is livestock in.

[More information in the slideshow](#)

Improvement of evaluation methods

LEAP Partnership, building consensus on methodologies for the assessment of environmental performance of livestock supply chains



By *Camillo de Camillis, FAO*

www.fao.org

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

Camillo de Camillis heads the Livestock Environmental Assessment and Performance Partnership (FAO LEAP). There is a proliferation of environmental assessment methods, claims and recommendations. LEAP is an FAO multi-stakeholder initiative committed to improving the environmental performance of livestock systems, whilst ensuring their economic and social viability.

Looking towards a contribution to Sustainable Development Goals and the Paris Agreement NDCs, LEAP builds consensus on guidance and methodology to assess and understand the environmental performance, monitor it over time and generate evidence for sound decision-making. The initiative wants to include not only burdens but also benefits in environmental assessment and also wants to boost action so that evidences for substantial environmental improvement are generated, knowledge is shared and the narrative around livestock and environment is changed.

The Secretariat is hosted at FAO. Participation is open and voluntary. Representatives in the steering committee have equal say. Every year, chairmanship is rotating (2019: IDF International Dairy Farmers; last year with the government of Uruguay; next year it will be with civil society and NGOs). LEAP is developing guidelines within technical advisory groups, reviewed by peers, secretariat, steering committee and the public. Achievements since 2012 encompass guidelines on environmental assessments of feed crops, poultry, ruminants and pigs supply chains with a focus on GHG emissions, biodiversity, soil carbon, nutrients, water footprinting. Experts are invited to participate in the public review of the publications on biodiversity and feed additives available from the FAO LEAP website. The focus of the LEAP3, work programme (2019-2021), is road testing of the LEAP guidelines in order to consolidate consensus, to address methodology gaps, to check consistency across LEAP guidelines, and to make them operational. A call for additional guideline development on the following topics was raised by LEAP partners, but is for the moment parked: ecosystem services assessment, eco-toxicity, biomass carbon soils, benefits from technology, circular bioeconomy. Road testers might also focus on these and other topics in their applications so that the LEAP methodology gets more compressive and the end of LEAP3.

The **LEAP Partnership** is a multi-stakeholder initiative committed to improving the environmental performance of livestock supply chains, whilst ensuring its economic and social viability

- **LEAP builds up consensus on comprehensive guidance and methodology to:**
 - Assess the environmental performance of livestock supply chains
 - Monitor performance over time (environmental tracking)
 - Generate evidence for shaping policy measures and business strategies

The diagram features a circular flow of arrows representing the LEAP process, with a central box for 'LEAP' and a timeline from 2019 to 2030. Logos for the Food and Agriculture Organization of the United Nations and the Sustainable Development Goals are also present.

[More information in the slideshow](#)

PANEL DISCUSSION

The panel consisted out of five panellists:

- Simon Kay (SK), EC-DG Clima
- Josselin Andurand (JA), Idele
- Jabier Ruiz Mirazo (JRM), WWF
- Sijne van der Beek (SVDB), CRV
- Monika Zehetmeier (MZ), LfL

Vivi H. Nielsen (VHN) moderated the discussion and opened the panel discussion with a slide [-link](#).

How to evaluate the potential and overall contribution of GHG emission from agriculture and more specifically from livestock production compared to other sectors?

SK The current EU policies do not place heavy responsibility on agriculture. There are also technologies around presenting quite substantial capabilities for mitigation. Even if of course they cost money... Despite this, emissions of non CO₂, methane, nitrous oxide have increased in the EU the last 2-5 years, so we should be careful. The share of agriculture in total emissions is in any case increasing in the future as the other sectors decrease emissions faster.

VHN But agriculture is so complex, pathways in other sectors are more obvious.

There is an increased demand for livestock products in the world.

If Europe reduces its production of livestock and its export will we then see an increased production outside Europe where there are greater GHG emissions associated with production of livestock and then end up with an overall larger GHG emission?

JRM There is an urgency to take action whatever whether this is easier in agriculture or not compared to other sectors to implement, and maybe the comparison with other countries is important. But we need to act in all places and all types of farming systems. According to IPCC, looking at the timescale to tackle climate change, we would have only 6 years of emissions left. How/when to remain into 2 degrees? There is a big difference between 1.5 and 2 degrees. With +2 degrees, we will lose X% of the coral reefs... Let us not start wonder whether it is worthy or not to take action. I agree it is important to increase efficiency and processes, but need to achieve a significant reduction.

JA Farmers are concerned about the challenge. They want to reduce greenhouse gas emissions and they are currently reducing it. But the farmers would not understand that we decrease beef production in Europe while increasing our imports of animal products. We are able to reduce the carbon footprint of European meat but we should be careful when we put some goals to European farmers.

SVDB There is no doubt we want to go to climate smart livestock farming, as we are all smart people. We understand the necessity, we all have kids. As scientists, we like to provide the whole picture and not just focus on one aspect to avoid trade-offs.

We see a productive smart agriculture narrative vs. an alternative narrative, a climate smart agriculture narrative.

Does one size fits all?

Or will we benefit from having both systems or rather a diversity of systems?

What are the research needs for improvements?

- JA There is a huge diversity of emissions within systems and between systems. This very much depends on the number of days an animal stays on the farm and varies a lot between animals. If we reduce the interval between two calvings, between the last calving and slaughterhouse, we save emissions. We have to be careful on the amount of concentrates provided to reduce farm emission and to be feed/ food competition friendly.
- MZ I have a little story: after the last ATF seminar, I sat with a representative of the automobile industry. He was struggling with very similar issues. Looking at existing systems, they have to identify main points to improve efficiency. But this does not solve the issue of side effects. They use similar LCA approaches. They see that reducing emissions and economics is a win-win solution. But improving efficiency in existing systems is not enough. They also need to go a step further and are thus working on strategies to change mobility as a whole. He said: *“Can you show me a map showing a concept for livestock production, which livestock systems in which area? To rethink the system completely, we need localised discussion.”*

What is the contribution of livestock to climate change? Do we use the right metrics to evaluate the carbon footprint of animal products?

- VHN LCA requires to look at the whole chain from farming to retail, consumers, consider nutritional value, environmental and economic impacts, different species and breeds.
- SK On the scenario side, we tried to have scenarios with different objectives: one on circular economy, one on nature-based solutions, one of them assumed keeping diets in line with international nutritional standards, etc. We have been trying to give direction from the policy perspective. The purpose of COP21 is to balance the effort between countries, but of course, there is a governance issue. Nevertheless, we should not use that as reason to block ourselves. Going forward needs the effort from farmers to be recognised, and to find a business case for this.
- MZ I agree a rebound should not stop us from acting. If there is a rebound, additional boundaries will keep you from the rebound effect. LCA often come to very similar conclusions i.e. increasing efficiency while using different methods. But LCA approaches have limitations especially when it comes to system boundaries and regionalized issues, we should complement them with other methods and get to the next step. How to address variability? How can farmers learn? Nitrogen efficiency management is a good example.
- Public If the EU is not able to produce livestock in a more efficient way, who will do it? How do you cope with a situation where the EU is a paradise and rest of the world is unliveable?
- JRM Europe on 10th of May this year has used all the resources the planet would allow. Of course, EU has an extraordinary position to grow food. But this is done at very heavy environmental costs. This gives us the obligation of leading the way. That’s the role of EU in the world. About the rebound effect: sometimes things are confused in the debate, with personalised attacks to some businesses. We need governance, cooperation at different scales and a systemic approach to solve issues, otherwise the overall volume of production/consumption gets out of control.
- JA We are acting now on farms but farmers see on TV people want to reduce meat consumption. Meat consumption represent approximately 5% of a French citizen carbon footprint. Our over consumption way of life and using planes for a week-end trip has a huge carbon impact. This is not always well understood by farmers. They are deeply suffering from the farm bashing approach. We really have to convince farmers, otherwise we will lose them, as a rebound effect.

How should our production in EU look like in the future? Do we go for a diversity of productions, depending on country, species?

- SVDB Yes, we have to reinvent systems and create diversity in systems, using a systems approach understanding dynamics, movement.
- SK There are a number of paths we can look at. The role of policies is to provide stability and foundation for it to happen. Geographical diversity and types of actions are important. Countries will have completely different responses.

Opening for comments from the audience

- Public I heard a lot on reducing emissions, carbon, CO₂ comes mainly from fossil fuels. We should use scarce resources to produce crops having the highest CO₂ capture per ha? For nitrogen, we face a problem with fertilisers. In a vertical farm, a cow will always emit methane. The problem is methane going to the air. If you capture the methane from that cow, you have solved the problem.
- SK: I showed a slide on decreasing emissions from different sectors. Fossil fuel reduction is a given in these scenarios. The vision of the European Commission is not focussed on carbon neutrality but instead on greenhouse gas neutrality: how a biogenic carbon balance could be achieved, looking at carbon energy crops for example. Fossil fuels substitution however takes land and would require changing livestock production is one way to make land available.
- JA About methane capture, we have a problem with enteric fermentation that emits methane throughout the day. Having a gas mask on the cow is not easy. Of course, the cow could be indoor, but people want cows outdoor, and it is really positive for a lot of other environmental indicators such as biodiversity for example.
- Public We need to encompass the multi-functionality of livestock systems. We need to be very careful with carbon sequestration. This requires having temporary grassland, manure and animals on land. We have very good circumstances in Europe. Some countries have very low organic carbon in soils. How do you cope without that?
- SK: We have projects working on organic matter in soil to foster carbon sequestration in soils. It is relevant to the community to be involved in projects like Beef Carbon [presented in the session]. This is an important pathway, but the best way is to start with mitigation.
- JA We are convinced sustainable farming is important. We are currently facing a global environmental crisis. Looking at biodiversity, we see the same catastrophic situation. Crops and ruminants systems have a lot of assets. We need to quantify carbon sequestration and to value carbon in soils more sharply.
- VHN Research has to be put into practice. For this we need multi-actor projects and strong partnerships with dialogues between actors (research, farmers, productions, sales, retail, consumers, advisors, NGO's) to come up with solutions. ATF invites you to continue the dialogue with European stakeholders in Brussels during its 9th Seminar on Nov. 6th 2019

Closing remarks

By Jean-Louis Peyraud, ATF President

Jean-Louis Peyraud thanks the speakers and the audience for the fruitful debates. He invites all participants to continue the discussion during the 9th ATF Seminar of November the 6th, 2019, in Brussels, where policy makers and European stakeholders are invited [–link to the programme](#).

He sums up the main findings. It is clear that livestock is a major contributor of greenhouse gas emissions. This is a problem but also part of the solution. With the commitments within the COP 21, it has become a political issue for agriculture. Objectives have been set up considering that agriculture has some specificities. Most of greenhouse gas emissions from agriculture do not come from CO₂ and are more difficult to mitigate. Forty percent of the overall budget of the CAP is expected to contribute to the climate objective and non-CO₂ emissions are expected to decrease by 50%. This is a complex issue: direct emissions from livestock in one side and land use, land use change and forestry in the other side. There are also connexions with other sectors and time scale should be considered: short vs. long term for carbon sequestration, short vs long live GHG. We need to consider this aspect when thinking on medium term (2050).

Livestock has to change and will not be the same in the future as it was in the recent past. Farmers are engaged, as we can see that 2,000 farms are engaged within the Life Beef Carbon project. Between farms, performances are very different. The issue is how to apply the best practices? The industry is also engaged. We've had the vision of Danish Crown. I am convinced that processors and retails can accelerate adaptations keeping step by step approaches. Beyond well-known mitigation options, efficient use of resources appears as a new interesting way of thinking: starting from the land use, using less crops for feed, growing dual purpose crops. There is a win-win strategy to find towards pesticide reduction thanks to a diversification of crops, less greenhouse gas emissions and more food per unit area. This could lead to a well thought-out reduction (surely not a drastic one) reduction of livestock production in Europe.

We need scenarios to highlight different avenues for improvement using a multi-criteria evaluation of performances (greenhouse gas emissions, biodiversity, other forms of nitrogen, economy...), to consider effects of policy measures and assess transition pathways. For example, the TYFA scenario offers a new perspective to look for an equilibrium between ruminants and monogastrics; that could be different across territories. Current scenarios show very large discrepancies in their conclusion. We need more research to consider economic and social consequences, pathways towards transition... Most of the scenarios conclude we should reduce livestock without anticipating the consequences. Most probably, growing more cereals would lead to increased N₂O that has a long residency time in atmosphere compared to methane, forest would lead to loose land for food production... ATF sees this as a major objective for the next research programme and advocates for scenario based on global approaches and also considering difference between local contexts.

Save the date

- [9th ATF annual seminar: Towards a climate Smart European livestock farming](#)
November 6th, 2019 from 10.00 to 13.00
(Follow-up of the ATF-EAAP special session)
[Programme and registration](#)
- [Fitter Livestock Farming workshop: What R&I can deliver to support climate mitigation and adaptation in livestock farming](#)
November 6th, 2019 from 14.00 to 16.30
[Video announcement](#)
[Programme and registration](#)

ATF promotes multi-functionality in agriculture. We also encourage future development of livestock production systems from a perspective of ecosystem services together with holistic agriculture approaches that more closely link livestock and plant. This aims to better use and protect the properties of agro-ecosystems and to maximise the use of biomasses of plant and animal origins through recycling and cascading approaches. These holistic agriculture approaches also need to encompass the agro-ecological domain and would stretch to consumers' global health by integrating from the ecosystem of a healthy soil, plants and animals in good physiological and sanitary conditions and healthy humans.

*For more info, download the **ATF [Vision Paper](#)** published in Feb. 2019 or visit our [website](#).*