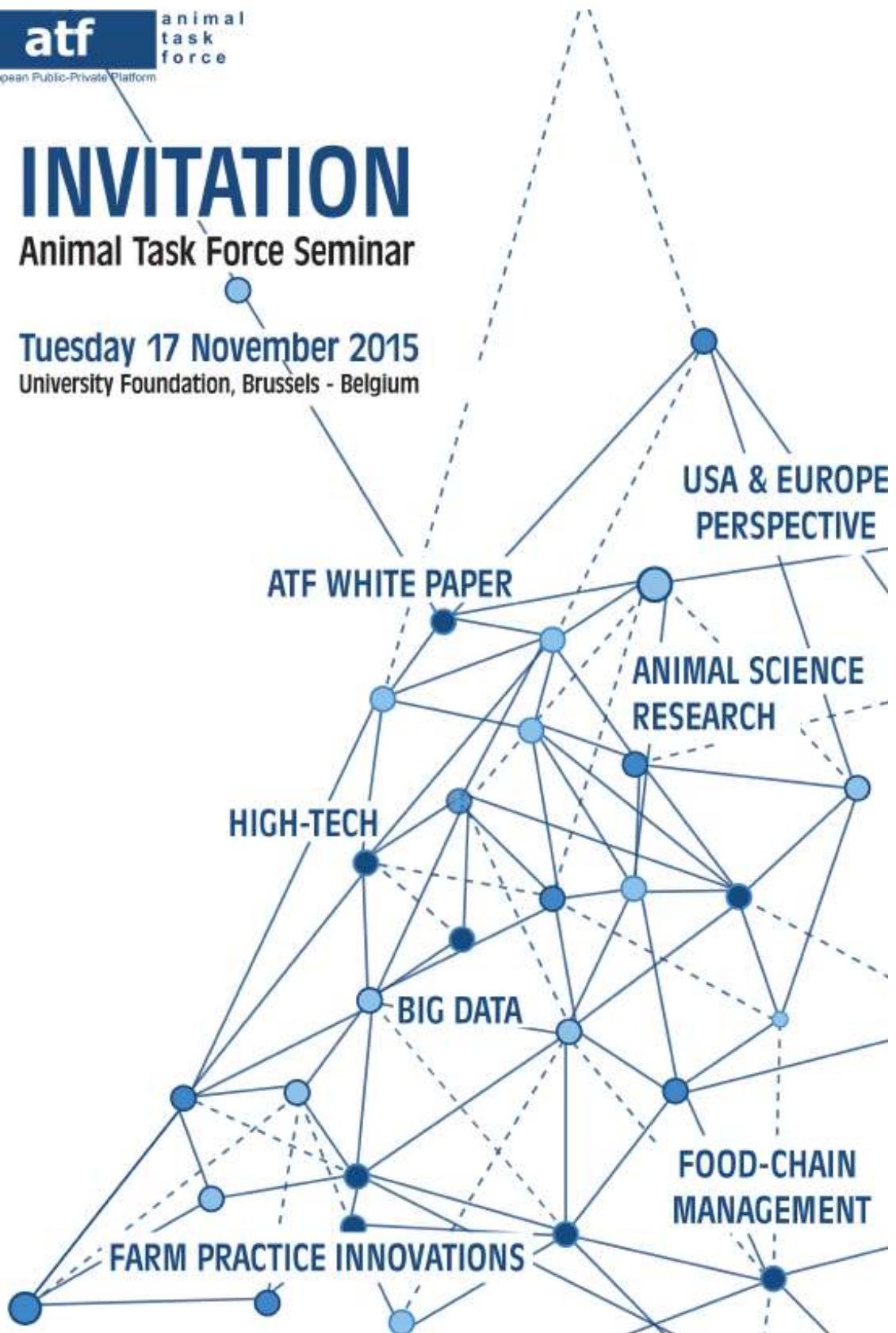


INVITATION

Animal Task Force Seminar

Tuesday 17 November 2015

University Foundation, Brussels - Belgium



Seminar report

5th Seminar Animal Task Force | Programme

17 November 2015 | Brussels

Venue: University Foundation, Rue d'Egmont 11 - 1000 Brussels
Room Felicien Cattier (*ground floor*)

MORNING: New global challenges for animal productions

USA/Europe. Sharing visions on strategic research
agendas

10.00 Welcome and introduction

Martin Scholten, President Animal Task Force

10.10 Vision FAO: Introduction to the OECD-FAO Agricultural Outlook, 2014

*Anne Mottet, Livestock Policy Officer, Food and Agriculture
Organisation*

10.30 Vision USA: Critical Role of Animal Science Research in Food Security and Sustainability, 2014

*Bernard Goldstein, University of Pittsburgh, National Research Council of
the National Academies, USA*

11.05 Vision Europe: The role of animal research in a climate smart and sustainable global food and nutrition security

Frederick Federley, Member of European Parliament

*Jean-Charles Cavitte, Directorate General for Agriculture, European
Commission*

Stephen Butler, Animal Task Force, Teagasc

12.50 *Lunch break*

AFTERNOON: Precision livestock farming

14.00 Introduction

Martin Scholten, President Animal Task Force

14.10 How to implement Precision Livestock Farming?

Looking back at ATF/EAAP Special Session on Precision
Livestock Farming

Daniel Berckmans, Leuven University, EC-PLF project

14.30 Break out groups

- *High-tech (Room D - 1st floor)*
- *Big data (Room Jean Willems - 1st floor)*
- *Herd management (Room Felicien Cattier - ground floor)*
- *Food-chain control (Room Felicien Cattier - ground floor)*

16.30 *Coffee break*

17.00 Plenary Wrap Up

17.30 Closure

Martin Scholten, President Animal Task Force

18.00 *Cocktail reception*



Welcome and introduction

Martin Scholten (President Animal Task Force) welcomes all participants at the 5th Animal Task Force Seminar. The Animal Task Force (ATF) has been working since 2011 to promote the research and innovation needs for a sustainable and competitive animal production in Europe. Societal challenges in the animal domain are the starting point for defining knowledge development and research needs that should lead to innovations to overcome these challenges.

ATF has identified three key societal challenges that we feel need to be addressed: Resource efficiency, Responsible livestock farming systems, and Healthy livestock and people. ATF develops and promotes priority topics for knowledge development in these three key areas.

Addendum to White Paper



In 2013, ATF launched a White Paper with research and innovation priorities for the animal sector. On Friday November 7, ATF launched an Addendum to the White Paper. This Addendum presents 14 priority topics for research and innovation to overcome important societal challenges, that we feel need support under the work programme 2016/2017 of Horizon2020. The figure below shows the 14 priority topics presented in the Addendum. The full Addendum can be found [here](#).

Members and partners of the Animal task Force are research institutions, European farmers and industry organisations of the whole animal production chain.

Martin Scholten announces that ATF Presidency has just been renewed, his being replaced as President by Jean-Louis Peyraud (INRA, France), Vivi H. Nielsen as new vice-president (Aarhus University and Danish Centre Food & Agri, Denmark). Year 2016 working theme has just been set up: **“Animal productions, the Key in a European sustainable circular bioeconomy”**.

Please find the presentation of Martin Scholten [here](#).

Morning session: “New global challenges for animal productions. USA/Europe. Sharing visions on strategic research agendas”

Speaker: Anne Mottet, Livestock Policy Officer, Food and Agriculture Organisation
“Global challenges for animal production”

Anne Mottet is Livestock Policy Officer at Food and Agriculture organization of the United Nations (FAO), Member of the GLEAM’s team, working on Global Livestock Environmental Assessment Model.

She starts off the Seminar with a draw of the current perspectives of world food consumption, with a focus on demand animal products, that is expected to grow from +70% by 2050 (FAO, 2012).

A rapid growth that has led to a “livestock production revolution” including up-scaling of farms size, technological changes, a shift in the geography of demand and supply, in species, increase of global sourcing and in volume. Least developed countries rely more and more on imports and animal productions have increased their impact on land and resource use and environmental footprint. FAO has worked out case studies highlighting the efficiency gaps in various production systems and species, showing large variability in emission intensities. Synergies and trade-offs in efficiency are numerous, i.e. on climate change where the special role of grassland has to be underlined. Large efficiency potential gains have been achieved since 1960s thanks to productiveness gains, improvement of feed use efficiency, farm consolidation in the EU, but the efficiency concept entails limits (demand side, cost of marginal gains, socio-economic efficiency, access to resource or market, protection of natural resources, trade-offs between efficiency and resilience).

Growing global markets means opportunities, but in a world of finite resources, optimization is an evidence that makes environmental, social and economic sense. We also need regulation to avoid further depletion of natural resources. The potential of precision livestock farming is important at global level, but at what cost and what should be the incentives? EU has a leading role in R&D and policy development. Improvements require that farmers work with scientists, but also governments for enabling policies, civil society for social demand, and the industry in multi stakeholder initiatives.

Please find the presentation of Anne Mottet [here](#).

Speaker: Bernard Goldstein, University of Pittsburgh, National Research Council of the National Academies USA
“Critical Role of Animal Science Research in Food Security and Sustainability, 2015”

Bernard Goldstein is Professor Emeritus, University of Pittsburgh Schools of the Health Sciences, Chairman of the committee that

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Revitalizing animal agricultural research is essential to sustainably address the global challenge of food security

wrote the report “The Critical Role of Animal Science Research in Food Security and Sustainability”.

The role of the National Academy of sciences is to advise science and technology, government and the nation. The Committee on Considerations for Future of Animal Science Research has appealed to a large panel of experts from various specialties in a fast track process (14 months). Main conclusion is that revitalizing animal agricultural research is essential to sustainably address the global challenge of food security. The committee foresees that there are only two certain predictions for animal agricultural research: 1) Between now and 2050, there will be a major crisis in animal agriculture that we do not now foresee; 2) over the same period, there will be a major advance in biological sciences that could significantly impact on animal agriculture, that we do not now foresee.

The report identifies critical areas of R&D, technologies and resource needs for research in the field of animal agriculture, both nationally and internationally. Among the recommendations: 1) Holistic approaches to animal productivity and sustainability; 2) Economic, environmental and social sustainability research; 3) Engagement of broader range of disciplines in animal science; 4) Coalition to bridge the communication gap between research and the public, fostering stakeholder engagement; 5) Research directed to development of global guidelines, standards and regulations.

He gives an overview of mechanisms of revitalization and highlights research recommendations topics: 1) Decision making relying on sustainability (environmental footprint, cost per unit of animal protein produced, recognition of societal factors); 2) Restoring research funding; 3) Support development and adoption of technologies; 4) Understand and address societal concerns about research. Among other topics, focus has to be made on 4 topics: alternative feed ingredients, use of antibiotics, animal welfare, climate change impacts.

Further details read the report of the National research Council of the National Academies [here](#). Please find the presentation of Bernard Goldstein [here](#).

Speaker: Frederick Federley, Member of European Parliament

Frederic Federley is a Member of the European Parliament since 1 July 2014, member of Committees on Industry, Research and Energy, Substitute Committees on Environment, Public Health and Food Safety and on Agriculture and Rural Development.

“I happen to love meat. I also love cheese. But since I consider myself a green liberal politician, I want to enjoy my meat and cheese with a good conscience. That’s one reason why I accepted the invitation to speak at this seminar. The title of this seminar is “New global challenges for animal productions here. And there are indeed challenges.”

There is a rising global demand that must be matched with a sustainable, transparent, using good practices, supply, respectful of the animal welfare. The sector has to respond to the changing consumer demand. Another bigger challenge is antimicrobial resistance due to systematic use of antibiotics. There are catastrophic scenarios we may face unless we take global action. Global warming is also a major issue. The sector must communicate very clearly on what is possible to achieve in terms of lowering emissions. We face big challenges that can only be solved through research and good cooperation between production sector and politics.

Please find the speech text of Frederic Federley [here](#).

*I want to enjoy
my meat & cheese
with a good
conscience.
As a politician, I will
fight for tougher
legislation on
antibiotics, but I also
count on your
cooperation*

Speaker: Jean-Charles Cavitte, Directorate General for Agriculture, European Commission
“Global challenges for animal production, role of R&I”

Jean-Charles Cavitte is Research Programme Officer at Directorate General for Agriculture and Rural Development, European Commission in the Unit dealing with Research and Innovation in the area of livestock, working for the European Commission since 1994.

He stresses on main features of European agriculture, characterised by its diversity that implies there is neither single challenge nor single solution. Animal agriculture/industry is part of a complex system and is facing multifaceted challenges, and finally, EU is a large exporter of food products, but still most of the production is consumed in EU with two stands. Then, he underlines drivers and trends of food security. A key issue is: *“How do we make the transition to more sustainable food and livestock systems?”*.

Research and Innovation have a role to play in meeting the challenges. DG Agri is setting up a long-term research strategy to improve consistency, efficiency and impact of research efforts. Jean-Charles Cavitte introduces and details the main issues and focus areas that should drive the next work programmes 2018-2020 and beyond: 1) Cross-cutting issues (systems approach, ICT as an enabling technology, enabling science and infrastructure, socio-economic research and support to policies); 2) Creating value from land : sustainable primary production (incl. integrated ecological approaches from farm to landscape, resource management, healthier plants and livestock); enhancing rural innovation.

Finally, he wonders whether animal agriculture plus food security, environment protection, climate protection, health and societal demand is a (im)possible equation with the current developed world consumption pattern. Food has never been so plentiful, so safe, environment, climate, health have never been so much looked after... Hopefully, new technologies and biological understanding provide new avenues. We need to (re)search further solutions, innovations with a systemic, multi-disciplinary, multiactor approach.

Please find the presentation of Jean-Charles Cavitte [here](#).

Speaker: Stephen Butler, Animal Task Force, Teagasc (Ireland)
“The role of animal research to support a climate smart, sustainable nutrition security in a circular bioeconomy”

Stephen Butler is Research Officer at TEAGASC, the agriculture and food development authority in Ireland. He is a member of the Moorepark’s team, which has played a pivotal role in the development of the Irish dairy industry.

Representing the Animal Task Force, Stephen Butler presents the role of animal research to support a climate smart, sustainable nutrition security in a circular bioeconomy. Starting from the consideration that by 2050, the world will have to face the challenge of providing healthy food and nutrition for 9 billion people, he analyses and answers the criticisms on animal production and consumption’s sustainability and explains how a sustainable European circular Bioeconomy is not possible without the animal sector. Animals play a substantial role in converting raw biomass (grass, crop residues, by-products) to food, biomass cycling, reducing the use of mineral fertilisers, serving ecosystem functions and providing food products with a higher nutritional value.

Innovation and technology can help us in having more efficient animals (greater yield, better product quality while reducing inputs and

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methane emissions), in improving the overall animal health, improve animal nutrition (feed quality and digestibility, reduce methane output...)... Finally, he refers to the ATF White paper's suggested priority areas for European research. At the end, rather than less, the World needs indeed more Livestock to achieve food and nutrition security, being adapted to the societal challenges and valued in a circular biomass-based economy. To achieve this, we need holistic approaches and global perspectives supporting innovations (with care), fostered by knowledge and enabled by technologies.

Please find the presentation of Stephen Butler [here](#).

Afternoon – Precision Livestock Farming (PLF)

Martin Scholten (President Animal Task Force) introduces the afternoon session reminding that PLF is Animal Task Force's annual 2015 working theme.

ATF prepared a [Scoping paper on PLF](#) in June 2015. This scoping paper presents the ideas of the Animal Task Force (ATF) about the use of Precision Livestock Farming within the domains of the key areas that merit research support defined in the ATF White Paper (2013). The scoping paper was based on input from ATF members in a consultation round at the end of 2014. Through organising two sessions on the implementation of PLF, ATF strives to gain insight in the why, where, and how to implement and use PLF in practice in the future.

The [ATF-EAAP Special Session on Precision Livestock Farming \(August 31st, Warsaw, Poland\)](#) has provided visions from both research and practice on PLF. By splitting up the presentations in two sections; demand (farmer, industry, EC) and supply (research, industry, big-data expert), multiple facets of the implementation of PLF have been covered. Afterwards, a discussion has highlighted the most important topics on which ATF has worked further (see [report](#)). During the EAAP session and on an online Blog, stakeholders were consulted in order to create a basis for the ATF Seminar.

Today, the **ATF seminar** invites stakeholders to share their vision on how to implement PLF in practice. Based on the input of this seminar, a **position paper of ATF on PLF** will be created by the end of 2015, including recommendations for better support of PLF implementation. It will also include the state of the art established by the **European Focus group on Mainstreaming Precision farming** (see [report](#)) of the European Innovation Partnership for Agriculture and Innovation.

Speaker: Daniel Berckmans, Leuven University, EU-PLF project

“How to implement Precision Livestock Farming? Looking back at ATF-EAAP Special Session on Precision Livestock Farming”

Daniel Berckmans is Professor at KU Leuven (Katholieke Universiteit), Belgium, and currently project leader on the FP7 PLF project “Bright Farm by Precision Livestock Farming”.

In his introduction, Daniel Berckmans set the scene, using this EU-founded project as an example of how to implement Precision Livestock Farming. Looking back at ATF-EAAP Special Session on Precision Livestock Farming (August 31st, Warsaw, Poland), he introduces the challenges for Livestock Production and how Precision Livestock Farming can answer to these challenges (animal health, welfare, environmental impact, farmers' social and economic importance).

Precision Livestock Farming is the management of livestock by continuous automated real-time and individual monitoring of production/reproduction, including health, welfare, nutrition, resource use... Through four videos, Daniel Berckmans shows practical application of PLF at farm level. Europe is investing in PLF technology and the objective of the FP7 PLF project “Bright Farm by Precision Livestock Farming” is indeed to develop a Blueprint on how to use PLF technology in the field, involving farmers and creating a bridge between research and the farm.

Thanks to this project, not only several farmers around Europe were trained to use PLF technologies in their daily farm practices, but new innovative SME businesses were created. The project has assessed how PLF could create value for the farmer on the financial and social recognition

applications. PLF products are entering the market and will develop through their use, feedback and improvement and by involving researchers from different disciplines. However, PLF is only a tool: the farmer remains the key player in the modern livestock sector and owns the key for value creation. Animal data can represent a new source of income for farmers and for both farmers and the society, the value of PLF technology transcends financial values.

Finally, the project proposes a new business model, where the cost of PLF investment and operation are shared along the value chain by payment for access to data pool. All the value chain actors (technical solutions providers, breeding companies, veterinarians, consumers, citizens and others...) can be PLF service providers and bring funding, set-up, services, data all along the value chain from feed to farm, from slaughter to retail...

Finally, he announces the Closing Conference of the EU-PLF Project in Brussels, Sept. 29th, 2016, co-organised with ATF.

Please find the presentations of Daniel Berckmans here: [part 1](#) – [part 2](#)

Wrap-up of the break out groups

The break-out group session aims to provide an interactive, stimulating and fruitful insights. Participants are challenged to debate on opportunities of applied PLF and the way ahead. Participants are dive into the topic, writing themselves the path towards an effective and productive implementation of PLF.

4 stations, held by a moderator (& a secondant - rapporteur) each station discussing on a theme:

1. **High-tech:** Richard Dewhurst, UK
2. **Big data:** Mogens Sandø Lund, DK
3. **Farm management:** Klaus Lønne Ingvarsten, DK
4. **Food-chain management:** Robert Oosevort, NL

The attendees to the 5th ATF Seminar are split into 4 groups, each of them represents a “wagon” of a sort of “train of knowledge and experience”. Each wagon passing station-by-station is led by a “conductor”.

- Christine Jakobson, SW (CJ)
- Stefan Rieder, CH (SR)
- Riccardo Aleandri, IT (RA)
- Peter Oostenbach, BE (PO)

Afterwards, moderators and conductors are interviewed by Martin Scholten (M.S.) and Daniel Berckmans (D.B.).

M.S. To the break out groups’ moderators, did you hear 4 times the same story?

Moderators: Common issues were:

- What is the farmer willing? What benefit will he have?
- Quality control in 3 following groups
- We want integrated approaches, we do not have systems that are covering all aspects.

M.S. What were the main outcomes from each breakout group?

High-tech

- Solution/ Problem, Problem / solution
- Common themes opportunities from other sectors we can figure on high tech solutions.
- Lack of business appreciation, expertise within scientists, proposition
- Efficiency / understanding variation
- Being driven by farmers issues, use technology to help farmers to understand what is being lost

- Robotic milking systems: can we exploit it more than it is.
- Companies developing bio sensors, cameras, ...

D.B.: To everybody. Should we start from what farmer is already doing, automating it?

Big data

- What do we want to do with big data? many senses of big data → enter into management precision tools
- Who owns the data?
- 2 groups talked about sharing and creating extra value form data
- Other groups: farmer may choose to load the data into the centre
- To provide services to farmers, we have to ask the farmers for the data

Farm management

- Includes
- Be sure things more integrated
- Long discussion on too much data to be meaningful. From big data systems, how to manage it, how to use it for big data groups, populations, companies.

Food-chain management

- Needs to be a clear value for the farmer (value it at supermarket, information collected to the right purpose)
- Ownership data not discussed.

M.S.: **Questions to Conductors, where did you have the best discussion?**

C.J.: Best discussion at High tech

S.R.: Big data good discussion

R.A.: Big data better, second round, increasing, different

P.O.: Difficult to say what best discussion.

M.S.: **To the conductors, what are the common themes that popped up at each station?**

P.O.: Added value for the farmer, defining what the farmers prefer to have as a pool principle, this should steer decision on what needs to be developed

C.J.: Who owns data? What to do with the data? How we should use the data for? Bureaucracy and governance that data could be used to.

D.B.: Farmer owns the data, but who owns the information is not clear.

C.J.: Other organization benefiting from data

R.A.: Some topics were re-discussed with a different perspective. Data ownership, difference between data and information. Value for farmer, consumer, society was discussed. No conclusion, we set up the scene. Discussion on education, patenting, publishing. Generating data by the farmer.

S.R.: Ownership of data, we are collecting a lot of data, data are information, not decisions, analysis or primary data → find optimal treatment of data. High tech or new tech linked to more money involved, capital intensity leads to shift some farming to more industrialized agriculture. I'm not sure politics / supporting family farms will want to support companies.

M.S.: **Surprised: you talked about technology and farmers. I did not hear about the animal?**

C.J.: At the first station, we said the animal was number one.

P.O.: Animal was absent from the discussions, except at high tech.

D.B.: Animal and farmer is one stakeholder. Farmers are not just using animals for money.

R.A.: We were discussing about the farmer, rather than animals. Discussion on the food chain: not clear definition of PLF in the food chain. Labelling, traceability, added value, interest of farmer vs industry interest.

- R.O.: We talked about PLF in food chain is different than for the farmer. Labelling brings additional value, link arising, PLF enter perspective of some other players. Labelling for nutrition came back. Taking the right food for your circumstances. PLF has to pass on the animal information to the dairy value chain.
- D.B.: Do you see farmers negotiating with big companies, or cooperatives can negotiate? What role for cooperatives / farmers. Individual farmer are not realizing the value of data.
- R.A.: The role of farmers should be the same as the role of associations of farmer. If you give them the contracting order. When you are paying the cost, you want to discuss.
- S.R.: Farmers organisations are sometimes fragmented, making things difficult, like one breeding organizations for each species, like in Switzerland. Breeding organizations can valorise the data, farmers cannot valorise themselves.



Concluding remarks and closure

M.S. Wrap-up on recommendations

- **Farmers take care of the animals; the technology available should help them better care of the animals. Things should not be the other way round.**
- **Farmers producing information, data: we want a fair share of this data, with partners in the chain, suppliers (cooperatives, companies), buyers (consumers).**
- **Bringing in PLF in practice starts with caring animals, by farmers, using information in a clever way, fair share, so that value chain are more customized, able to tackle societal challenges, so that consumers know what is the name of the chicken.**

Thank you for your contribution, which will help us to write a position paper. We hope you also have collected information that you can take home on livestock production and innovation.

Jean-Louis Peyraud, new elected President, warmly thanks Martin Scholten for his strong contribution to the Animal Task Force these last years and we will welcome his support as former President in the coming months.