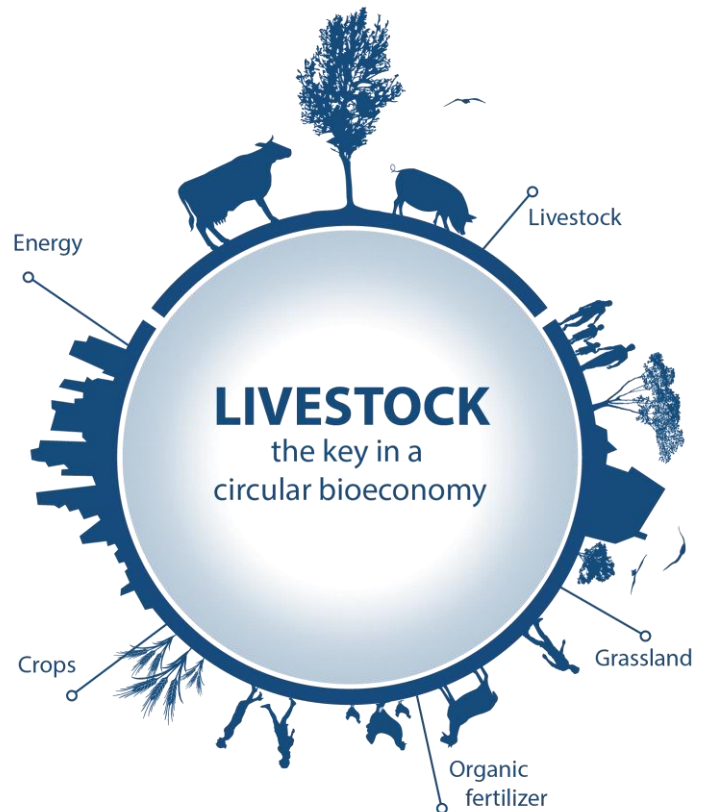


## Animal Production, the Key

## in a European Sustainable Circular Bioeconomy



**Animal Task Force & EAAP Special Session**  
**Monday 29<sup>th</sup> Aug. 2016 14:00h - 18:00h**  
**EAAP Annual Meeting 2016 - Belfast - UK**

# Session report

# Animal production

## the *Key* in a European sustainable circular Bioeconomy

Animal Task Force & EAAP Special session

EAAP Annual meeting 2016

August 29<sup>th</sup>, 2016 Belfast, UK

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# Animal production

## the *Key* in a European sustainable Circular Bioeconomy

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## Programme

### Public policy perspective

- 14:10 **Introduction to the European Bioeconomy & outcomes from the SCAR 4<sup>th</sup> Foresight**  
*Stefano Bisoffi, CREA, SCAR*
- 14:30 **Vision from the perspective of a European NGO**  
*Marta Messa, SLOW FOOD*
- 14:50 **Vision from perspective of the HLPE (United Nations)**  
*Patrick CARON, HLPE-CFS UN World Food Security Committee*
- 15:10 **Vision Animal Task Force European Public Private Platform**  
*Jean-Louis Peyraud, President Animal Task Force*

### Private sector's perspective

- 15:30 **A farmers' approach on regulating the ecological cycles**  
*Kees Gorter, farmer, Netherlands*
- 16:00 *Coffee break*
- 16:30 **Reducing the "feed versus food" competition**  
*President Paul Featherstone, SugaRich group, EFFPA*
- 16:45 **Biorefinery, organic fertilisation, pet food and other industrial use of animal by products**  
*Cécile Crespel-Darcet, Environmental division, Cooperl France*
- 17:05 **Panel Discussion**  
moderated by *Vivi Nielsen-ATF* with all speakers and audience
- 17:55 **Closing** *Philippe Chemineau*

## Welcome and Introduction

The ATF Chair Jean-Louis Peyraud opened the ATF & EAAP Special session, by introducing the goal of the afternoon, the Animal Task Force, and outlining the programme. The session was introduced by EAAPs president: Philippe Chemineau (until next Wednesday). About 80 participants were accounted.

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.

The year 2016 of ATF is focused on the role of Animal Productions, as Key in a European sustainable circular Bioeconomy, which is the basis for this Special Session. By doing this, the Animal Task Force would like to engage a dialogue between research, farmers, industry, decision makers and stakeholders to provide input for public policies on Livestock's role in realising a Sustainable Bioeconomy for Europe, and to share on avenues for improvement and research needs.

## Vision of the role of animal productions in the European Bioeconomy from a Public policy perspective

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### Introduction to the European Bioeconomy, outcomes from SCAR 4<sup>th</sup> Foresight

*by Stefano Bisoffi, CREA, SCAR Standing Committee for Agricultural Research*

Stefano Bisoffi is Scientific Director of CREA, the main research organisation in Italy, and member of the European Standing Committee for Agricultural Research (SCAR). The 4<sup>th</sup> Foresight Exercise was published by the SCAR in Oct. 2015 ([-link](#)). The main objective was to analyse the development of a sustainable Bioeconomy for Europe and anticipate on future challenges and research questions towards 2050. Three scenarios were devised regarding the provision/demand of biomass for materials and energy: bio-scarcity, bio-boom, bio-modesty. The study has produced 5 key principles-recommendations: 1/ Food first, 2/ Sustainable yields, 3/ Circularity, 4/ Cascading approach (making the best use possible of the available biomass, using highest value products first, the last step being conversion into energy), 5/ Diversity (providing resilience). The notion of circular Bioeconomy brings a growing complexity, encompassing biomass sources, biomass uses, global challenges and technologies.

***In the livestock sector, the three sustainability pillars (environment, economic, social) are more connected than in any other sector.*** Animal productions are a very diverse area (in terms of animals, products, feeding systems, farms). The competition between food and feed should be regarded according to the type of production. In some cases, it is false problem, as livestock, especially ruminants, are able to eat feed or by-products that are inedible for human ("as land multipliers"). Also because types of land use have a great ecosystem value themselves, contributing to restoring organic matter in soils and its stability.

On climate change: ruminants are responsible for high levels of methane production, but energy can be produced from waste, nitrogen and phosphorus from excrements can be re-utilized and soil organic matter

and manure are opportunities. On dietary issues, livestock products provide digestibility, essential amino-acids, minerals, more proteins/fresh weight than vegetables; animal fats, on the other hand, may pose health threats and protein consumption in many developed countries exceeds WHO-recommended intake; balanced diets and appropriate lifestyles are key factors of healthy lives and sustainable public health systems. The major research issues appearing are: 1/ Increased efficiency by precision livestock farming, improved feeding and housing, breeding for efficiency and low emissions, recovery of valuable chemicals from side streams, 2/ Animal health and zoonoses (One Health), antibiotics!, 3/ Socio-economic aspects: resilience, diversification of incomes, cultural heritage of territories, integration with organic farming, international trade versus sovereignty.

**Question:**

**Public:** The more we know about complexity, the more it is difficult to get big step changes. What about the livestock sector?

**SB:** Complexity has to be addressed using holistic view and integrated approaches. Complexity is not good for social issues, social issues are abhorred by politicians who want easy solutions. The best way to develop coherent strategies is rather to do individual steps one after the other.

[Browse the slideshow.](#)

## Vision from the perspective of a European NGO

*by Marta Messa, SLOW FOOD*

Marta Messa is Director of the European Office of Slow Food in Brussels [-link](#). The organisation was founded in the mid 1980s to prevent disappearance of local food cultures and traditions, counteract the rise of fast life and combat people's dwindling interest in the food they eat. Slow Food was born from a group of friends who saw the risks of the emerging fast food culture. Now, it is gathering millions of people from worldwide, promoting the right of everyone to good (in terms of taste and health), clean (in terms of the environment) and fair (for producers and consumers, as well as in terms of animal welfare) food. Slow Food works with producers, its philosophy evolves with the experience on the ground of people who live from production.

Referring to the recent publication of "Vision of sustainability for Europe", [report](#) from R. Madelin, adviser of President Juncker, Slow Food is questioning the "Europe needs to feed the world" vision, that is too often used to justify a lack of will to change the ways of production. Growth of demand is supposed to occur outside Europe and malnutrition problems are not a matter of quantity of food available, but of access to food.

The Slow Food approach to meat production and consumption is explained in its Slow Meat campaign as well as in the booklet "Too much at steak". The presentation highlighted the hidden costs of the industrialised food system, with reference to the livestock sector:

- Environment: nitrogen and ammonia emissions, biodiversity loss, bees disappearing due to monocultures and pesticides;
- Human health: cancer, increasing antimicrobial resistance;
- Low animal welfare;
- Low workers welfare;
- Negative impacts on the right/access to food.

Slow Food promotes diversified agroecological systems (ie. diversity of breeds for a better resilience to climate change), encourage short value chains... **“We are not against innovation, but innovation must be accessible, the governance of the food system is key”**. The solutions proposed by intensive/industrial farming, high input expensive farming are not available for all farmers, only for some having high investment capacity. There are many examples of successful agroecological farms producing good, clean and fair meat. We see growing consumers are becoming climatarian, they make their consumption choices being aware of the impact of the food. Precision farming is not going to solve the problem. **We need... a systems change**. The transition can happen if there is a political will.

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## Vision from the perspective of the HLPE (United Nations)

*by Patrick Caron, HLPE-CFS (High Level Panel of Experts of the UN World Food Security Committee)*

Patrick Caron is Director General of research and strategy at CIRAD, the French agricultural research and international cooperation organisation working for the sustainable development of tropical and Mediterranean regions. He is also chair of the Committee for Food Security of the United Nations.

The HLPE report n°10, “Sustainable Agricultural Development for Food Security and Nutrition: What Roles for Livestock?” is presented for the first time apart from political instances ([-link](#) to summary and recommendations). The HLPE is an independent scientific body aiming to feed the political debate. In 2014, it was requested to work on “Sustainable agriculture for development for FSN”. It decided to focus on the livestock as an entry point to look at the agricultural sector, as it is a main driver/powerful engine for the whole agricultural sector transformation. The report develops a vision moving away from the 3 pillars of sustainability and going a step forward: **“sustainable agricultural development (SAD) is agricultural development that contributes to improving resource efficiency, strengthening resilience, securing social equity and responsibility of agricultural and food systems in order to ensure food security and nutrition for all, now and in the future”**.

The report quantifies the role of the livestock sector in terms of production value, calories, protein produced, co-products, services, use of land resources, water resources, GHG emissions. The study has designed a typology of livestock farming systems, showing a high diversity, independent from their size and looked into their radical transformation. Main challenges have been identified:

- Environmental, footprint of livestock and feed crops
- Economic: functioning of markets, lack of integration of SDGs in trade agreements, corporate concentration
- Social: working conditions, gender inequalities, ageing labour force and attractiveness, conflicts
- Health: one-health approach, antimicrobial resistance
- Animal welfare: implementation of OIE’s standards.

The main recommendation is to use a common approach (8 steps): from a diagnosis of situations in a diversity of farming systems, find context-specific pathways, combining technical actions, investments and enabling policy instruments, addressing multiple challenges and covering all dimensions of sustainability.

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# Animal productions, the Key in a European circular Bioeconomy

*by Jean-Louis Peyraud, President of Animal Task Force, Scientific Director at INRA.*

The transition to a circular Bioeconomy is inevitable if we want to achieve a sustainable development and cope with the increasing demand for safe food and for non-food biomass, while making agricultural systems climate and environment friendly.

Animal productions provide protein-rich and safe food bringing several essential micro nutrients not found in products of plant origin (iron, Ca, Vit, specific fatty acids...). The nutritional assets should be considered when comparing efficiency of production of animal and plant protein. Indeed, we would need larger amounts of crop proteins to replace animal proteins and meet our nutritional requirements.

Livestock contributes to a more efficient agriculture by valorising food-chain by-products thanks to efficient and robust animals adapted to new European feed sources. Feed efficiency assessments should consider animal productions which can maximize the production of human edible proteins, optimising biomass and improving crops/livestock synergies at local and more global level. A simulation of the share of animal proteins in the diet and associated land shows that we need more land when the proportion of animal products in diet decreases under 15-20%. Livestock is often criticized for the low efficiency of proteins (and energy) production (ref. SCAR 4th Foresight report). But calculations depend on production systems and often overlook grassland, forage, by-products as inedible feed sources.

The role in regulating the ecological cycles by recycling biomass from humanly inedible resources and maintain soil organic matter content and fertility, grassland acreage, using manure as a bio-resource is also important. Animal manure is a huge source of carbon sequestration, nitrogen and phosphorus for crop production and of organic matter necessary to soil fertility. But in intensive livestock production systems, manure is often seen as a residual burden rather than a valuable resource and there are significant losses. Soil territories exclusively devoted to crops production have low levels of organic matters, which may partly explain the problem of stagnating yields. A better use of this resource is a win-win strategy that will reduce the environmental impact of livestock farming and imports of energy and phosphorus. Technologies would help improve manure refinement and extract high value ingredients, minerals and energy.

In addition, besides providing renewable energy such as biogas from manure, animal productions offer ecosystem services linked to the vitality of territories, employment in rural area, landscape and biodiversity preservation, cultural heritage. Whether novel foods (rape seed, algae, grass, by-products, insects, in vitro meat...) are an alternative to livestock has to be looked at considering the time for innovations to enter market generally.

To conclude, animal productions are essential in an agriculture which serves a circular bio-based economy. Avenues to enhance their role in a circular bio-based economy are: 1/ development of integrated agro-systems approaches (crops/livestock synergies) and new technologies, 2/ development of public policies and market signals to stimulate, promote and support innovations, 3/ Research and innovation, investment and governance.

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# Vision of the role of animal productions in the European Bioeconomy from the private sector's perspective

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## A farmers' approach on livestock regulating ecological cycles

*by Kees Gorter, livestock farmer, Netherlands*

Kees Gorter owns a farm with currently 120 dairy cows, 90 dairy calves and includes 83ha land (20ha is used for maize). He holds a business studies degree with the thesis "Energy production from manure through co-digestion". He is the Chairman of the Natural Energy Ooststellingwerf Foundation, the initiator of the SNO Energy Ltd that operates the digester.

*"Farmers always are direct, I'll go straight forward!" he says. "People keep telling me what I have to do: citizens and industry farming... Is it wise to reduce our consumption of animal products in Europe from the point of view of sustainability? Can we easily replace protein of animal origin? I have 200 cows and I pay my staff well and we have the highest level of welfare. All pictures from the video ([-link](#)) come from my farm. **Why farmers have been keeping cows? Because of poor land, animal and human manure are used as fertilisers for soils. Now, we are addicted to fertilizer, producing more and better crops, they are faster and more efficient than manure, and allow to feed more people and animals. Political decisions are made on perceptions. Citizens have no relation with agriculture, but consumers have one motto: "the cheaper food the better"**.*

*"I know what to do and how to work on my land. But nobody can tell me how much phosphorus is in there. We are addicted to fertilizers that cost a lot of energy to make. Large chemical industries are very powerful in Netherlands, multinationals have a strong influence in Brussels and manure is leftover".*

As a conclusion, he would recommend to 1/ Develop mineral concentrates from manure, 2/ Push the use of manure instead of fertilisers, 3/ Make better use of science, 4/ Stop ridiculous manure restrictions, 5/ Talk with farmers and make them responsible, 6/ Understand how many minerals come in, stay on the farm, go off, 7/ Make regulations SMART.

A video shows the State Secretary for Agriculture of USA ([-link](#)) showing the importance of agricultural producers have in the society by providing food necessary to the life of other citizens, thus allowed to work in other sectors.

[Browse the slideshow.](#)

## Keeping food losses in the food chain

*by Paul Featherstone, President SugaRich group, Chairman of EFFPA, European Former Foodstuffs Association*

Paul Featherstone is the Chairman of SugaRich, specialist in the procurement of Former Foods from the UK food and drinks industry and the resulting manufacture of high quality animal feeds from these materials. He introduces EFFPA. The Association was founded in 2014 and has close links with FEFAC, the European Feed Manufacturers Association. The sector recovers from waste about 3.5 million tons of former foodstuffs that are processed and used as animal feed in the EU. The association estimates a potential of 5-6 million tons taking into account future innovation and expansion.



***“What is a former foodstuff? They are foodstuffs, other than catering reflux, which were manufactured for human consumption in full compliance with the EU food law, but which are no longer intended for human consumption for practical or logistical reasons or due to problems of manufacturing or packaging defects or other defects and which do not present any health risks when used as feed.”*** It includes intermediate or incorrectly packed/shaped/flavoured/labelled products, seasonal products and products removed from the human consumption market for commercial reasons. They are feed ingredient with high value and high energy content. This includes mainly bread, crisps, biscuits, chocolate, pasta, snacks... Former foodstuffs with animal protein are not allowed in feed for food-producing animals, with the exception of milk, eggs, honey and porcine gelatine...

The nutritional value of former foodstuffs is relatively high and comparable to wheat and barley. EFFPA has calculated potential land savings with recovering former foodstuffs to feed animals for UK. The sector offers cost effective solutions, providing food producers with a consistent & sustainable outlet for their losses (reducing their food waste and increasing revenues), providing feed producers with an alternative energy-rich ingredient to grains (reducing the need for land-requiring raw materials). EFFPA stresses that environmental gains in the processing of former foodstuffs should never gain priority over feed safety and traceability requirements. EFFPA’s recommended priorities for research are:

- Packaging residues: physical risk (incl. particle size) and chemical risk (incl. contact materials and inks)
- Animal nutrition: former foodstuffs still an unconventional feed in many EU member states
- Environmental footprinting (LCA comparisons): highlighting sustainability aspect

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## By-products valorisation in the pig industry

*by Cecile Crespel-Darcet, Cooperl, France*

Cécile Crespel-Darcet is head of Sales Department, in charge of Environmental issues at Cooperl, a private cooperative group investing and carrying out industrial pig projects for 50 years. Cooperl is the leading pig cooperative in France, grouping 2,700 farmers and steered by the farmers. It is committed to deliver services on building, equipment, livestock management, construction, health, efficiency, genetics advisory services, feed procurement, ensuring slaughter, cutting and pre-pack, producing meat products and rendering environmental services and even product commercialisation.

***“How does Cooperl manage to combine pork breeding environmental footprint reduction with added value creation for farmers? » There is no « waste » but by-products valorisation for internal and external use.***

The company has set up an environmental approach bringing together biorefinery, organic fertilisation, pet food & other industrial use of animal by-products. The environment branch (100 people) has set up a cascading approach to valorise by-products (manure, meat by-products, waste water, fatty waste, bad smell) for internal and external use (aqua feed & pet food ingredients, fertilisers, pure water, biofuel, heat...) in order to reduce costs of water and manure treatments, smelling, energy production. Being involved at farm level, Cooperl is able to control the quality of by-products at farm (through feed and new technologies): a technology called “TRAC” (treatment separating liquid from dry parts, trapping more phosphorus and nitrogen compounds) allows to produce high value organic fertilizers from pig farming and slaughterhouse by-products to be used in wine crops, fruit, vegetable, rapeseed cultivation for organic and conventional

agriculture. 80% of the industrial heat (for slaughterhouse, cutting plant, cooking plant, melting plant, C3 plant, slurry drying) is produced from biomass and recycled waste biorefinery from the food industry activities. Water from slaughterhouse is recycled to non food Cooperls' industry needs (biofuel, treatment factory, fertilizer production). Finally, a biogas production from methanation project is linking Cooperl with the territories and city of Lamballe.

To conclude, all pig industry by-products can be valorised as products or energy, in close cooperation with industry, and farming technologies can improve their quality. Its central position and industrial position allow Cooperl to create economic value, control costs. It is suited to Brittany because of its high density of pigs farming. To be sustainable, the system has to be built with the local shareholders in order to share services and energy. Future avenues are micro algae, biofuel valorisation.

[Browse the slideshow.](#)

## Panel discussion

The panel consisted out of five panelists:

1. Stefano Bisoffi (SB), CREA, SCAR
2. Marta Messa (MM), SLOW FOOD
3. Patrick CARON (PC), HLPE-CFS (High Level Panel of Experts of the UN World Food Security Committee)
4. Jean-Louis Peyraud (JLP), President Animal Task Force
5. Kees Gorter (KG), farmer, Netherlands
6. Paul Featherstone (PF), SugaRich group, EFFPA European Former Foodstuffs association
7. Cécile Crespel-Darcet (CCD), Environmental division, Cooperl France

Vivi Nielsen (VN) moderated the discussion and opened the panel session with a slide showing the various roles of animal productions in a European circular Bioeconomy. Starting from human diet and the need of securing nutritious and sufficient food, it is likely that *“the food in our refrigerator will never be as balanced as feed in the silo of a pig.”*

SB *“Should we reduce our consumption of meat? We need nutritional value. But meat consumption has also drawbacks, to which the medical sector is paying much attention today, like in the past on fats, then sugar, salt, now the focus is on protein excesses. It’s a matter of finding the right balance that is good for the environment. Probably what is good for environment is good for diets too. We should not demonize animal productions.”*

JLP *“Facing the reduction of meat consumption, we can export part of our meat production, while we need to minimize the impacts at production level”.*

MM Showing the leaflet *“Too much Steak”: “Eat less meat of better quality”*. *“We do believe we need to reduce meat consumption AND also production, that is not sustainable because of the ecological boundaries of the planet. Reducing meat production and downsizing production can be a solution: we see farmers producing pig meat owing a processing company. They were in debt, they have downsized to 60 pigs and are now selling directly to clients and have improved their animal welfare standards. It can work.”*

- Public *“Reducing the consumption of animal production from the perspective of sustainability is the wrong way, we need to improve production within an agro-ecosystem. Producing feed in a linear way is not sustainable. We need to use animals in the best, circular way: feeding animals with biomass that is produced, going to 100% valorisation of biomass. We need manure, best produced, fresh manure, organic matter manure that can really go into a biobased society, we do not want a mineral society. If we do that, then we close the cycle. From my perspective, animal production is part of an agro-ecosystem. It contributes to a diet balanced in proteins and to a final end product that is a healthy diet. We do not want to eat only super fruits or super grains.”*
- Public *“Has EU the capability to produce at a price that Asia or Africa can afford?”*
- Public *“There is not a single consumer. We have the necessity to produce cheap meat which, if we don’t produce it in EU, will come from Asia. We have the capacity in EU to produce welfare friendly, better quality meat in intensive farming. The picture is complex.*
- Public *“Animal productions are part of our gastronomy, our culture, Slow food developed a lot of discourses from that. The cultural value of animal productions should be emphasized. How to deal with the high level of consumption? At EU we are consuming obviously too much animal products, and there is a decline in consumption we must accompany and not resist. The answer is to maintain the high level of production. Reducing consumption, compensated by exports, is not a solution. The new solution may be to produce locally.”*
- MM *“Do we need to produce cheap meat? Society has a vote, it is not all the same and it changing every time. Look at the issue of how much money consumers spend in food, and look at where subsidies go. Industrial farming is not the only answer.”*
- Public *“We can look at individual consumption and trends. I eat too much meat, coffee, sugar, I choose it. Considering the whole agro-ecosystem: how can we optimize it for our people needs?”*
- Public *“We see battles between people supporting the industrial sector vs people that do not believe in it. In the Netherlands, the whole agro-ecosystem is based on imports, process and exports. Therefore we have welfare. We have to continue. We don’t have enough agricultural lands in Netherlands. If we reduce production, then we will have to import. EU is also responsible for Africa (exports of food, expertise...) where climate change has very negative effects with a high population growth. We have to do something otherwise they will come to EU. Therefore industrial farming is necessary”.*
- KG *“EU farmers cannot produce for the price Asia is buying. As a member of Friesland Campina, we are exporting to all over the world. My milk price has increased since I entered the room. Indonesia milk has not the quality of the milk we produce. The welfare of my cow is important for me. I want to breed cows as long as possible on my farm. What value does export of my milk to the Far East bring to my production? Access to water is also a crucial problem.”*
- PC *“We have the absolute need to renew completely: 1/ the role of livestock: before, the main objective was to produce feed, but we forgot manure, cultural habits, links with society. We have now to recraft the role of livestock and design new strategies. Change our mind on why to produce livestock, true at local, regional level... Exporting meat to Africa... I would rather promote the idea to produce in Africa. See what we produce for and be consistent with that; 2/ reinvent completely the link between crops and livestock and the way we think about resource: recycle, consider by-products, create a circular*

*bioeconomy. Thus, we need innovation, regulations, time, involvement of stakeholders; 3/ invent new value chains, rethinking new value chain of resources for a new type of economy”.*

Public *“Working with a group of farmers in the West of France using different routes of livestock production. Finding an agreement between farmers and industry is difficult. In the cloud of words, I’m missing “acceptability”, “public policies”... without policies, livestock will be a museum”.*

Public *“The circular bioeconomy is the context. What we have is broader: international competitiveness, with much pressure on milk production and land. Question: why putting discussion on the circular Bioeconomy? Do you have a broader view on Bioeconomy than just linking crops and animals?”*

Public *“Animals are needed in the bio-based economy. Many people are still linearly thinking: we should produce crops for one kind of products. Our framing is “Don’t forget animals” in a biobased society transition in our food production system. We need a next step and include the perception from the general public on our food and how we can produce it. Public perceptions might be very diverse, like nature and food are diversity, we need diversity, we need the social dimension, the public perception dimension. I agree, we have to extend, speak about “biobased society” instead of “biobased economy”.”*

Public *“Animal production exist for centuries. The problem is that we want it at high volume, high level. With too much segmentation, the circle is broken. We need to do it at much higher level, that’s a question for research. We need a higher level as population is increasing and climate change is putting pressure in some geographic regions that will not be able to produce, even with the knowledge. Prospects in Northern Africa is frightening, and raise the issue of how to restore the soil? I would dream we could train Algeria and Morocco... To export, not to Asia, but rather to Mediterranean area, is vital for our stability.”*

## **Closing remarks**

*by Philippe Chemineau*

From the presentations and discussion, some words come up, and others are missing. “Foresight”, we need to look forward, we also need modelling and complexity of brains connections, and to consider trade-offs (quality vs environment). We spoke mainly about Europe, but we may consider global issues. Decisions are too often made on perception, thus EAAP is bringing science to allow decision based on science. We need to consider that there is no more “waste”: we have a unique planet. Even though there are oppositions, extensive versus intensive systems, this is the planet of environment, nutrition, bioenergy, animals, we need to invent intensive systems that care for the planet. We need to find innovations that are quick, efficient, and respectful of the environment.

*by Jean-Louis Peyraud*

We need to avoid too simplistic visions of reality and care for the environment, economics and society. The role of animal productions has to be seen in the context of a circular Bioeconomy, animals producing manure, which in turn maintains organic matter in soils, and keep in mind the cultural role they play, ie French “Cassoulet” is made of duck and beans.

All participants are invited to join the ATF seminar, in Brussels, on Nov. 16th 2016, where a large panel of European stakeholders will be invited.