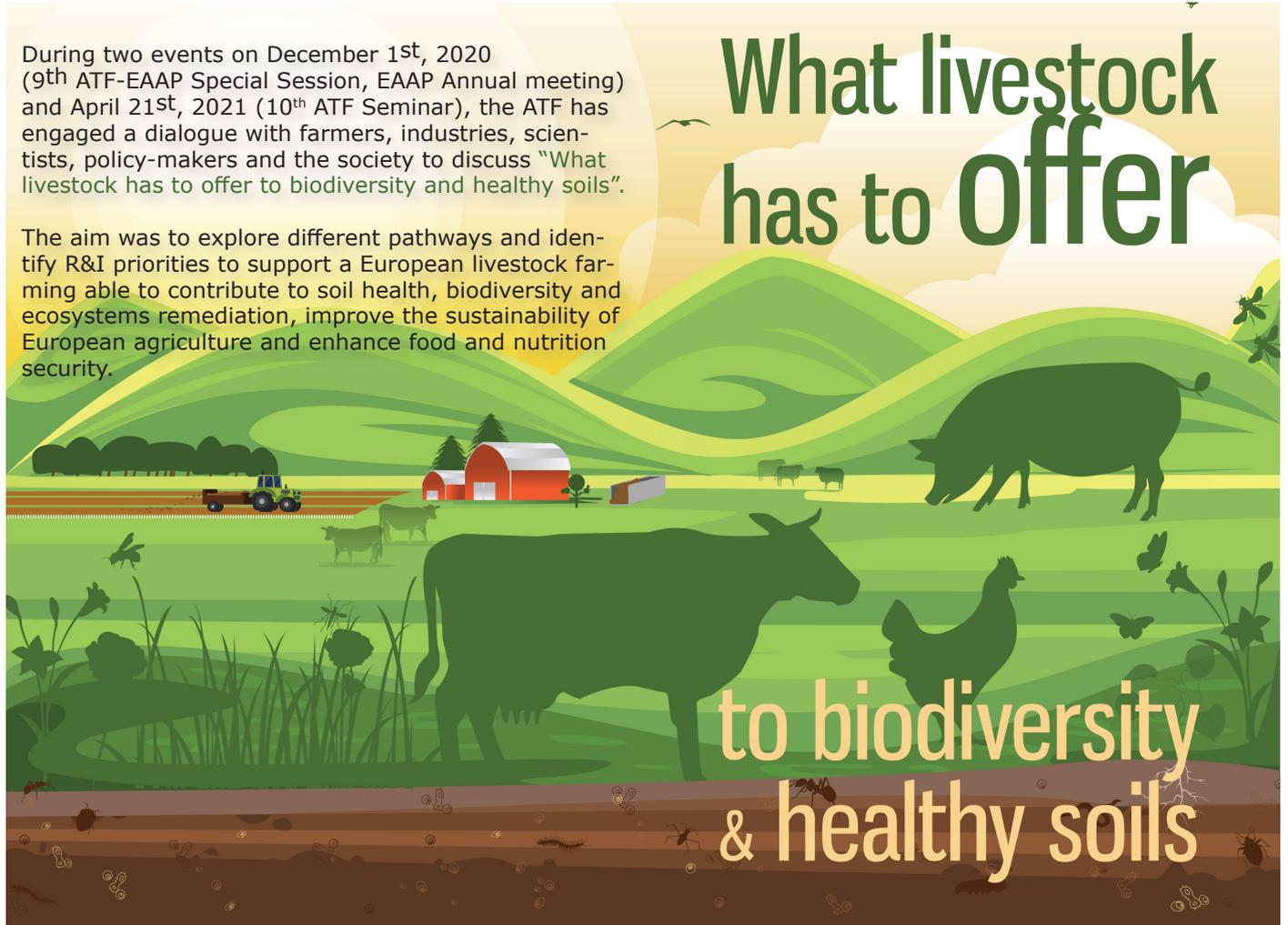


During two events on December 1st, 2020 (9th ATF-EAAP Special Session, EAAP Annual meeting) and April 21st, 2021 (10th ATF Seminar), the ATF has engaged a dialogue with farmers, industries, scientists, policy-makers and the society to discuss "What livestock has to offer to biodiversity and healthy soils".

The aim was to explore different pathways and identify R&I priorities to support a European livestock farming able to contribute to soil health, biodiversity and ecosystems remediation, improve the sustainability of European agriculture and enhance food and nutrition security.

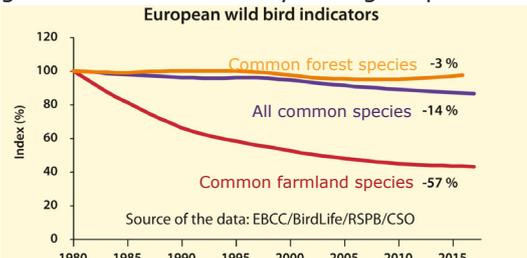
What livestock has to offer

to biodiversity & healthy soils

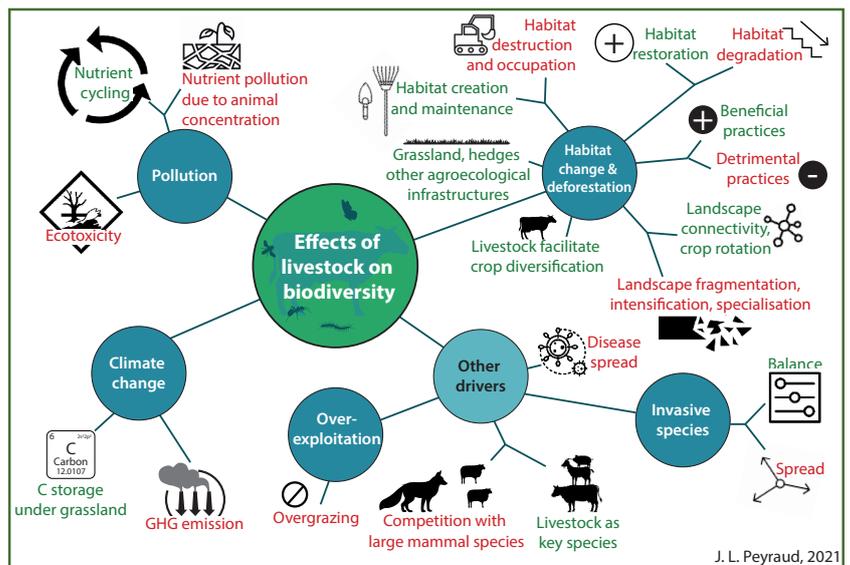


CONTRIBUTION TO POLICY CHALLENGES

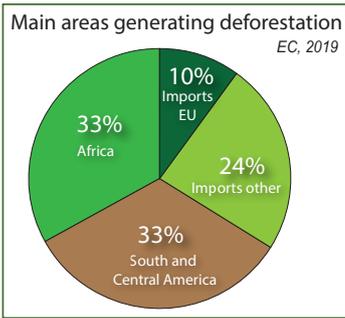
The European Biodiversity and Farm-to-Fork Strategies have set out very ambitious targets towards biodiversity and soil health remediation, supported by research and innovation within Horizon Europe. Livestock has both positive and negative impacts on soils health, plus effects of livestock on biodiversity that are variable across farming systems. **Livestock production can contribute to improve biodiversity and preservation of habitats.** Livestock is a reservoir of solutions to increase soil C-sequestration, soil biological fertility, and above all organic matter, which is an essential component of ecosystems that regulate and control many ecological processes.



EBCC/RSPB/Birdlife international/Statistics Netherlands



A diversity, along with well-managed European livestock farming systems associating a variety of crops and livestock breeds with more resilient animals can support a reduction of protein imports, the development of protein autonomy, remediate biodiversity loss via grassland, provide attractive landscapes and significant ecosystems.



Developing European protein autonomy to reduce soy imports

Global deforestation, a major cause of biodiversity decline through the loss of habitats

European livestock farming has already significantly reduced its protein imports for animal feed. Today, EU accounts for 10% of the global deforestation linked to soya, meat, palm oil, cocoa, rubber, timber production. Europe has interest in developing a higher degree of autonomy in plant protein production (EC Protein Plan) and halting biodiversity loss. This can be achieved by developing protein crops production, making better use of well-managed grassland, developing further grassland-based systems, local production of oilseeds and protein crops and more diverse cropping systems (grass, legumes, extracting protein from grass for feed).

Reintroducing grassland in cropping systems & diversifying crop rotations

Crop rotation and diversification of land use result in a higher diversity of species and allow a reduction of pesticides.

50% of bird species depends on grassland habitats for food and reproduction (Pain and Plenkowski, 1997)

Livestock manure and slurry from monogastrics have positive and negative effects on soils. In well-managed grasslands, it contributes to the proliferation of invertebrates.

Well-managed grasslands with ruminants brings...

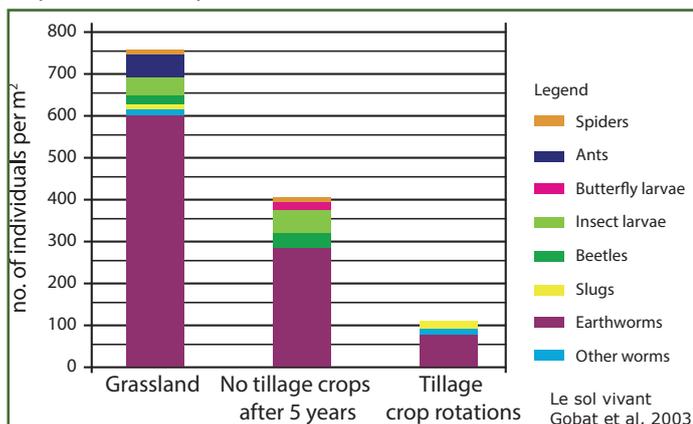
- a diversity of forage species
- diversification of land use
- diversification of landscapes
- maintenance of open habitats
- corridors for a variety of flora, insects, birds, and mammals

50% of European endemic plant species depends on grassland biotope (Vandewalle et al, 2010)

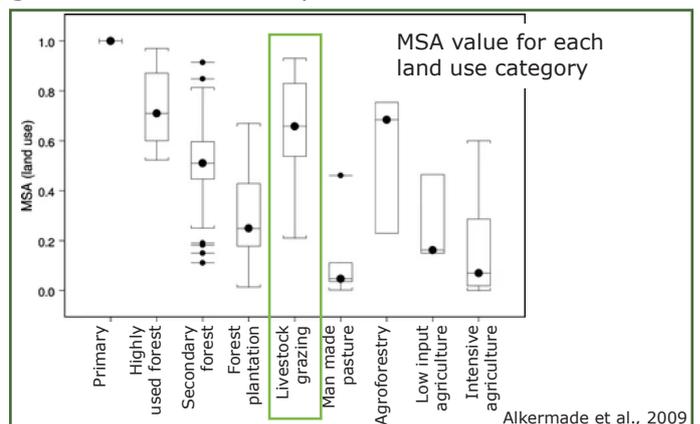
Vegetation constitutes habitats for arthropod populations

Soil under permanent grassland has a high level of carbon and biodiversity of invertebrates

Permanent grassland offers a higher degree of biodiversity than some planted forests.



Effect of reforestation to the detriment of permanent grassland on biodiversity.



INSPIRING PRACTICES & POLICIES

Farmers best practices to mitigate or remediate biodiversity losses

Irish grazing systems

Seán Finan, CEJA, Ireland, sees himself as a custodian of the countryside turning inedible proteins (grass from his farm) into edible protein (meat and milk): “Biodiversity is key to a well-functioning farming system. My objective is to improve soil fertility and structure by using cover crops and multispecies swards, with an aim to gain resilience and cope with periods of more frequent droughts and heavy rain-falls”. He measures soil quality several times a year, supported by his Teagasc farm advisor and uses liming to adjust soil pH, a critical indicator for soil fertility. Forage crops provide high-quality protein winter feed and contribute positively to soil structure. Habitats are protected by rotational grazing and reduced chemical fertilisers. He looks forward to reduce significantly the use of pesticides and herbicides.



Agroforestry in Portugal and Spain



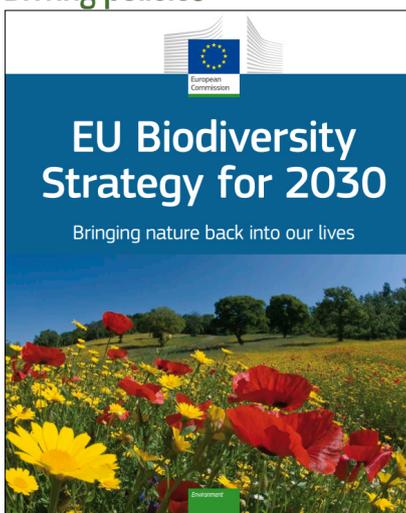
Miguel Ángel Higuera, Porcine Livestock Producers National Association (ANPRO-GAPOR): Iberico pork production in the Dehesa forest Region. The Dehesa ecosystem produces holm oaks and cork oak that supports the rearing of Iberian pigs, wood pruning for charcoal, production of corks sheets; pastureland between trees for livestock farming, as well as areas of cereal cultivation for animal feed. The forest is maintained through trees selection. Different breeds of porks are kept in the area under the umbrella of the Iberico name together with the beef and sheep production.

Better practices from the food supply

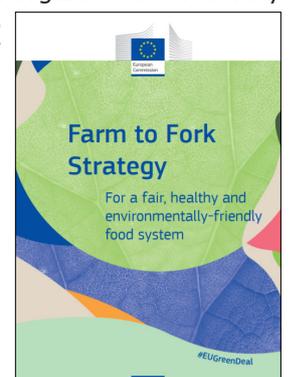
“Biodiversity and environmental schemes can deliver true value to farmers and consumers. A simple point system and mechanism for price premiums can accelerate transformation towards biodiversity and soil health and lead to measurable impacts on the agricultural landscape. Respecting the farmer’s will to develop his/her own biodiversity roadmap is key to successfully implement those schemes. And communication may build on elements to valorise products towards consumers”, say Dionys Forster & Robert Erhard, Nestlé



Driving policies



“Farm animals have historically played an important role in the European environment and culture, and they are often an integral part of ecosystems and traditional landscapes that they have to a large extent shaped. As a result of the increasing agricultural intensification, the variety of animal farming systems is leaning towards more intensive farms in many parts in Europe. They lay very much apart the normal ecological role of large herbivores. A conversion to less intensive practices is necessary if we want to get to sustainability. Extensive livestock systems can contribute to preserve valuable ecosystems such as grassland, attractive landscapes. They can help provide significant ecosystem services, including healthy soils and soil organic matter. Building up soil organic matter is very important because it requires decades to prevent its loss. We should ensure that the new CAP legislation is fit for these challenges to transition to a more sustainable agriculture including sustainable animal farming and regenerative grazing. That would help the achievement of the targets of the Biodiversity strategy and the Farm to Fork strategy”, says Humberto Delgado Rosa, Director Unit D. Natural Capital, DG Envi – European Commission.



RECOMMENDATIONS

Topics for Research and Innovation



Recommendation 1 – Development of sustainability standards

“The complexity of biodiversity remains a challenge. We need an integrated assessment of biodiversity, soil health, carbon sequestration, ecosystem services, taking stock of farm/country schemes that provide a strong body of evidence. We need more accurate metrics using Life cycle Assessment (LCA) and Ecological indicators to implement and promote synergies between land restoration, grassland biodiversity, biomass productivity, SOC storage and livestock productivity”, Félix Teillard, FAO, LEAP.

“Research is needed into metrics that accurately reflect the complexity of livestock systems. Using the lens of agroecology means looking at a wider set of variables. We need to define a minimal set of proxy metrics that offers farmers the freedom and the support to innovate. To ensure these are effective, we need a lot more R&D on carbon, biophysical and social aspects, financial flows”, Patrick Worms, EURAF.

“It is much more difficult to measure biodiversity than GHG. With remote sensing we have more capability in reasonable and cost-effective ways, combined with adequate decision support systems for farmers”, Tiago Domingos, Terraprima.

“There is a lot of potential for business models around biodiversity and soil health, but this needs to communicate better with consumers based on solid metrics and monitoring system. We need automated systems to retrieve indicators from farms/suppliers to understand their footprint and take the appropriate sourcing decisions. We need to be holistic in the assessments to encompass biodiversity and climate change and to bring to the consumer in a trustful way”, Dionys Forster, Nestlé.



Recommendation 2 - Breeding for resilience & robustness, species conservation

“From an animal breeding point of view, it is important to anticipate trends towards more diversity in future livestock systems as a result of context specific optimization of systems. We need animals able to better cope with lower feed quality or feed scarcity, with traits like animal robustness, resilience, but also animal behaviour in relation to human and predators. It is important to maintain a broad genetic diversity between and within breeds for future breeding”, Sipke J. Hiemstra, Centre for Genetic Resources – WUR.



Recommendation 3 – Research on livestock and agroforestry systems

“A lot of research on silvopastoral systems combining trees with livestock suggests that they speed up ecosystemic processes. Animals manure the trees, leading to faster growth; the trees provide fodder, shade and buffering of water cycles, accelerating animal growth. Multiplying the species numbers accelerates the biological processes engine. Biodiversity contributes directly to profits (soil fertility, tree fodder, timber, wood, fruits, honey, animal welfare, etc.). But there is a deep knowledge gap about those systems, which explains why so few farmers adopt them”, Patrick Worms, EURAF.

“Places where we most dramatically need to introduce livestock are places where there is no livestock right now, like in Portugal, in areas occupied by forest that led to very big fires in 2017. We need eco-schemes incorporated into rural development policies supporting social infrastructures”, Tiago Domingos, Terraprima.



Recommendation 4 – Governance and incentives

“The CAP offers the right tools to steer transition towards sustainability. The ecoschemes, together with agro-environmental measures of the rural development, will be a crucial tool to bring in what is missing, like livestock in such a way as to provide not only meat but also landscape, biodiversity, healthy soils as a deliverable from the farmer”, Humberto Delgado Rosa, Director Unit D. Natural Capital, DG Envi – European Commission.

“Farmers’ access to education and training is key. We need an acknowledgement from policy makers that livestock farming is central to foster biodiversity and soil health. Farmers will need to be incentivized to provide ecosystem services. Each farm is different, so the measures should be specific. CAP and practitioners should have access to a wide list of options for farmers to implement the most suitable on their farm. We need to develop communication strategies, for farmers to understand their role, for consumers to know the valuable work taking place on farm”, Seán Finan, CEJA.

“We need to set goals for farmers to work on it. Our association proposes goals to farmers that are area-specific and set at the farm level for the farmer to be an entrepreneur. The future of agriculture is to combine functions of production of food with nature production. Cooperation between farmers is also very important”, Alex Datema, BoerenNatuur.

Animal Task Force (ATF) is a European Public-Private Partnership and a leading body of expertise linking European industry and research providers for developing innovation in the livestock sector.

Secretariat address: 149 rue de Bercy, 75595 Paris Cedex 12 - France.

www.animaltaskforce.eu – info@animaltaskforce.eu



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