EUROGROUP FOR ANIMALS

PROTECTING ANIMALS TO PROTECT THE PLANET

PROTECTING ANIMALS TO PROTECT THE PLANET

Animal protection has been for too long absent from the conversations on climate change. Yet, animals and animal-related sectors play a significant role in ensuring a transition towards climate-resilient societies.

Intensive livestock farming represents a significant share of the planet's emissions that cannot be ignored.

It's also the breeding ground for future pandemics. A majority of emerging infectious diseases in humans are zoonoses. Whether originating in wild animals, as is assumed with COVID-19, or in farm animals, as is the case with avian and swine flu, they all pose serious threats to individual and global health.

Finally, animals can play an important role by capturing carbon and by supporting the livelihoods of the poorest populations.

"We envisage a world in which (...) humanity lives in harmony with nature and in which wildlife and other living species are protected."

UN 2030 Sustainable Development Agenda[1]

1 https://sustainabledevelopment.un.org/post2015/transformingourworld

Addressing the elephant in the room - the role of intensive livestock farming

Intensive livestock farming negatively affects the environment at all stages of production, with a far greater impact than other forms of agriculture. The livestock sector has a direct impact on climate change through the **emissions** generated by enteric fermentation and manure decomposition, and an indirect impact through emissions generated by the production and transport of feed, as well as by **land-use** changes. Animal agriculture is, indeed, one of the key drivers of **deforestation**. The Food and Agriculture Organization estimates that emissions from livestock supply chains, including feed production, processing and transport, as well as energy used on and off-farm, and post-farm emissions, account for about **16.5% of total human-generated greenhouse gas emissions**.[2] It is not only the number of animals raised, but also how they are raised, that impacts the environment.

Pandemics and the use (and abuse) of animals

Pandemics such as the Avian flu, the African Swine Fever or, more recently, the COVID-19 one stress the need to build more resilient and sustainable societies. COVID-19 demonstrated the human and economic costs of **a zoonose pandemic** and, while it emerged from wildlife, it has also reminded the world of the role played by intensive farming in spreading zoonoses.

How we produce and consume food has an impact not only on animals but also on public health, environment, people and climate.

An increased focus on animal welfare can play a key role in finding solutions to many of the current global challenges we are facing. De-intensifying animal production, by distancing farms and by drastically reducing the numbers of animals, coupled with better animal welfare, will improve animal health and contribute to reducing the risk of future pandemics.

2 https://www.theguardian.com/commentisfree/2021/oct/19/climate-crisis-factory-farming-paris-climate-un

Reducing meat and dairy production and promoting plant-based solutions to fight climate change

The most important greenhouse gases from animal agriculture are the potent greenhouse gases methane and nitrous oxide.[3] Even if we succeed in eliminating fossil fuel emissions, emissions from the current global food system, heavy in animal protein, would leave the 1.5°C target out of reach and it would even make it difficult to stay below 2°C of global warming.[4]

Feed production to supply livestock farming and the demand for meat and other livestock products are important drivers of deforestation in the Amazon. As a consequence, deforestation has reached such rates that the Amazon has now ceased to function as a carbon sink. Instead it releases more greenhouse gases than it absorbs.[5]

It is evident that a significant reduction in meat and dairy production is essential.

The United Nations launched a campaign calling for people to eat less meat, recognising that switching to a more **plant-based diet** is an important climate action.[6] The EU Farm to Fork Strategy, part of the European Green Deal, recognises that current food consumption patterns are unsustainable from both health and environmental points of view and notes that: *"Moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables will reduce not only risks of life threatening diseases, but also the environmental impact of the food system"*.[7]

3 Grossi, G. et al. 2019. Livestock and climate change: impact of livestock on climate and mitigation strategies. Animal Frontiers, 9 (1): 69–76, https://doi.org/10.1093/af/vfy034

4 Clark et al. 2020. Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. Science, 370 (6517): pp. 705-708

5 Gatti, V.L. et al. 2021. Amazon as a carbon source linked to deforestation and climate change. Nature, 595: 388–393. https://doi.org/10.1038/s41586-021-03629-6

6 "Act now". United Nations. https://www.un.org/en/actnow

7 European Commission. 2020. Farm to Fork Strategy: For a fair, healthy and environmentally-friendly food system.

The EAT-Lancet Planetary Health Diet, a global reference for diets within the planetary boundaries, is predominantly plant-based with moderate amounts of animal proteins such as poultry, fish, eggs and dairy and limited amounts of red meat.[8]

Climate change can render farming more and more difficult and threaten the possibility of growing food. A changing climate with more extreme weather events can affect plant growth and production, promote the spread of new pests and diseases, increase exposure to heat stress, or encourage soil erosion and damage due to stronger winds, wildfires or flooding.

8 Springmann, M. et al. 2018. Options for keeping the food system within environmental limits. Nature, 562: 519–525

Battling climate change underwater

Aquaculture is increasingly highlighted as a low carbon impact form of animal production[9], but there is little differentiation between the higher and lower impacts of different species and different production systems. The **overall emission of greenhouse gases** (GHG) per kg of edible flesh at the farm gate **from finfish aquaculture is similar to pig and broiler meat,** but there can be significant variations. Bivalves, algae, and seaweed have the lowest emissions as they rely on natural food from their environment.'[10] It must be a **priority for aquaculture to transition away from the high trophic level fish species** which demand high levels of inputs, **towards low trophic species that can use naturally available resources and contribute to carbon sequestration** and other ecosystem services.

Poor welfare standards for the undomesticated species that constitute aquaculture production commonly result in mortality rates on farms of around 15% to 20%, which is lost feed and energy resources on top of the welfare impact. A significant portion of investment in aquaculture is now going into recirculating aquaculture systems, highly intensive production systems which create and aggravate welfare problems[11] and use between five and twenty five times as much power as other aquaculture systems[12].

9 Farm to Fork Strategy

10 https://aac-europe.org/en/recommendations/position-papers/305-aac-recommendation-on-the-climate-footprint-of-the-eu-food-system

11 https://www.compassioninfoodbusiness.com/media/7440517/ras-for-atlantic-salmon-grow-out.pdf

12 Ramin Ghamkhar, Suzanne E. Boxman, Kevan L. Main, Qiong Zhang, Maya A. Trotz, Andrea Hicks. (2021). Life cycle assessment of aquaculture systems: Does burden shifting occur with an increase in production intensity? Aquacultural Engineering, Vol. 92.

Improving farmed animal welfare to fight climate change

Improving animal health and welfare could help **reduce methane and nitrous oxide emissions** per kg product by diminishing the number of animals that are lost due to health issues, and by cutting the emissions attributed to animals that die before they can reproduce or produce consumable products.[13]

Grass-based and mixed-farm systems, which are less dependent on additional feed, have better capacities for **carbon sequestration**.[14] Well-managed grazing can improve soil organic carbon and nitrogen content, and therefore partially offset net GHG emissions. Other options to promote carbon sequestration in livestock systems include restoration of degraded grazing land with the introduction of silvopastoral and other agroforestry systems, which also have the potential to deliver better animal welfare conditions.

Sources of Greenhouse Gas Emissions (according to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services):

13 The Impacts of Climate Change Mitigation Strategies on Animal Welfare, Sara Shields * and Geoffrey Orme-Evans

14 Canu & Forabosco (UNEP DTU 2018), Greenhouse gas emissions of livestock raised in a harsh environment, International Journal of Global Warming, 2018 Vol.15 No.4, pp.431 - 446

Some of the mitigation techniques that are often suggested, such as the use of specific diets or feed additives, have negative implications for animal welfare and health. Feeding highly concentrated grain-based diets to pigs in industrialised systems where access to roughage is scarce, reduces emissions per kilo of meat, but is associated with intestinal problems and gastric ulcers.[15] Similarly, genetic selection and imports of more productive foreign breeds can be counterproductive if the imported breed does not adapt to the local climate and environment. Finally, switching from ruminant (cattle and sheep) to monogastric species (chickens and pigs) in intensified production systems negatively impacts the environment through the generation of **high levels of air, soil and water pollution** – not to mention that these systems are intrinsically detrimental to animal welfare. There should be no need to turn animal production systems into industrialised chains to make them climate-friendly. On the contrary, substantial emissions reductions can be achieved by adapting current systems, rather than requiring a further shift to industrialised farming.[16]

Working on animal productivity by improving animal welfare, for instance by lowering environmental stress, can also positively affect the level of GHG emissions emitted by the sector, provided the level of production is not increased. Poor livestock health and well-being are associated with behavioural and metabolic changes such as reduced feed intake, reduced ability to digest food, and increased energy requirements for maintenance, all of which can lead to the culling of affected animals, and thus to a decrease in emission efficiency. In addition, it has been shown that the growth of pigs is badly affected by several stressors such as thermal stress, restricted space allowance, and regrouping.[17] To the contrary, improvements to pig welfare, notably by reducing social stress, is thought to directly contribute to improved feed efficiency.[18]

15 The Impacts of Climate Change Mitigation Strategies on Animal Welfare, Sara Shields * and Geoffrey Orme-Evans

16 Gerber, P.J.; Steinfeld, H.; Henderson, B.; Mottet, A.; Opio, C.; Dijkman, J.; Falcucci, A.; Tempio, G. Tackling Climate Change through Livestock—A Global Assessment of Emissions and Mitigation Opportunities; Food and Agriculture Organization of the United Nations: Rome, Italy, 2013.

17 Llonch

18 Llonch p. et al, Review: current available strategies to mitigate greenhouse gas emissions in livestock systems: an animal welfare perspective, Animal (2017), 11:2, p 280

In 2017, academics concluded that **'the majority of these strategies [to reduce GHG emissions from livestock production] aim to increase productivity (unit of product per animal), which in most cases cannot be achieved without good standards of animal welfare'**.[19]

Although a long life is not always one worth living,[20] extending dairy cow lifetime is an example of such an approach. Cows can easily live for up to 15 years or longer, but on most intensive indoor dairy production facilities the lifespan of a cow is typically closer to six years. **Improved longevity** would reduce the total lifetime emissions of dairy cows when accounting for the resources needed for rearing replacement animals. In the UK, the proportion of methane emissions produced by replacement heifers has been estimated at up to 27% of the total emissions.[21] **Improvements in health** may also reduce inefficiencies and poorer productivity of individual animals. Both lameness and mastitis reduce milk output, which leads to an increase of GHG emissions per litre of milk produced.

Moreover, climate change impacts livestock directly, for example through heat stress and increased morbidity and mortality, and indirectly, through quality and availability of feed and forages, and animal diseases. Smallholders, livestock keepers, fishers and pastoralists are among the most vulnerable to climate change, especially those in the Global South.

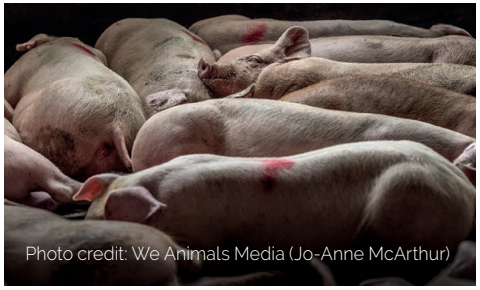

Photo credit: We Animals Media (Jo-Anne McArthur)

19 Llonch

20 https://pdfs.semanticscholar.org/e1d7/152d27e3db79938fa420c424c098c63d1544.pdf?_ga=2.81627031.1846170942.1594040383-580902818.1594040383

21 Garnsworthy, P.C. The environmental impact of fertility in dairy cows: A modelling approach to predict methane and ammonia emissions. Anim. Feed Sci. Tech. 2004, 112, 211–223.

Working animals - invisible allies in fighting climate change

There are an estimated **200 million working equidae worldwide**, supporting hundreds of millions of people, many of which are **in low to middle income countries, the most affected by climate change** yet the least paid attention to[22]. Floodings, extreme weather conditions or fires from low-income countries like those in Africa and the Pacific Islands remain underreported, but this is where **people depend on working equidae for their livelihoods, water access, transport or health.**

With the simple relationship that the more developed a society becomes, the better the welfare conditions for the animals, working animals welfare and development are mutually reinforcing. It is a simple idea that the more effectively a farmer, family or community looks after their horse, mule or donkey, the more productive they will be, which together offers a more promising alternative to the climate change driven future.

The interlink between working equidae and climate change stretches across the world with horses, mules and donkeys used in sustainable cities, farming, rewilding or forestry in order to reduce carbon footprint and improve biodiversity. There again their hard work and resilience can be taken for granted and their welfare be put aside, that is why it is crucial to recognise these human-animal relationships.

The Sustainable Development Goals where working equidae play a role (SDGs 1, 2, 3, 4, 5, 6, 7, 8 11, 13) remind us again how widespread these relationships are.

22 https://www.nature.com/articles/s41558-021-01168-6

Build Bank Better - taking a bet on climate change

With only three percent of the Earth's land surface considered "ecologically intact"[23], the national and international development finance institutions (DFIs) continue to finance projects which further fuel the climate change emergency[24] and are incompatible with the Paris Agreement. Further segmentation of the issues takes the focus away from the gravity of the problems we are facing. However, there is no viable scenario to continue current growth by solely divesting from negative activity and only sound and environmentally friendly investments have a future.

In order to make economies survivable, the national and international DFIs must take a bold shift from "more" to "better" and enforce this objective throughout their funding channels. That is why we propose a comprehensive outlook linking climate change to environmental and social criteria, with animal welfare being its incremental part.

DFIs **Policy and Standards must recognise the link between climate change, sustainability and animal welfare and implement the criteria for improved project evaluation in conjunction with** policy developments across the world[25 26 27 28 29 30 31], as well as the OECD, the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD). Only by equipping DFIs staff and promoters with criteria to accurately assess environmental, climate and social impacts and risks, we will finally see the emergence of projects that are fit for the climate change driven future.

23 https://www.frontiersin.org/articles/10.3389/ffgc.2021.626635/full

24 https://www.theguardian.com/environment/2020/jul/02/revealed-development-banks-funding-industrial-livestock-farms-around-the-world

25 Farm To Fork

26 https://www.oie.int/en/standard-setting/aquatic-code

27 https://ec.europa.eu/food/animals/welfare/eu-platform-animal-welfare/platform_conclusions_en

28 https://www.farms-initiative.com

29 https://betterchickencommitment.com

30 https://www.bbfaw.com

31 https://www.fairr.org/index/

The Role of Animals in Carbon Capture

Animals can play a significant role in capturing carbon from the atmosphere. It is the case for whales for instance. Each great whale sequesters 33 tons of CO_2 on average, maintaining that carbon out of the atmosphere for centuries. As comparison, a tree absorbs up to 48 pounds of CO_2 a year.[32]

Therefore, preserving global whale populations can contribute to fighting climate change. While international organisations have recently implemented programs that fund the preservation of carbon-capturing ecosystems, such as Reducing Emissions from Degradation and Deforestation (REDD), adapting these initiatives to support efforts to restore whale populations could support the global fight against climate change.

32 Roman and others 2014

Rue Ducale 29 – 1000 Brussels
Tel: +32 (0)2 740 08 20
Email: news@eurogroupforanimals.org
eurogroupforanimals.org

@Act4AnimalsEU
@eurogroupforanimals
@eurogroup-for-animals

EUROGROUP FOR ANIMALS

FSC www.fsc.org
MIX
Paper from responsible sources
FSC® C114687