Animal Welfare. Worldwide.

# Transforming Agriculture

## as part of Climate Action and Food Security

Improving animal farming practices is key to achieving many of the Sustainable Development Goals (SDGs), especially as half of the world's rural poor are livestock keepers, mostly subsistence farmers. Small-scale, traditional food production models such as pastoralism have supported civilizations over centuries and are beneficial to both animal health and welfare and the environment as well as our own health and wellbeing.

In these circular, low-impact systems, livestock are critical assets with multiple roles that contribute to the resilience of households. These farming systems that work with nature and support animal welfare can also more efficiently respond to the challenges of climate change and ensure disaster risk resilience and nutritional security.

Although the agrifood sector is recognised in its unique role as both a driver and a victim of climate change, only three percent of climate finance is directed to agriculture.1 Sustainable development policies can better address the many challenges the world faces by targeting these funds to transform the way we farm. This paper sets out to address some of the common issues found in our current food systems and explain how animal welfare measures can be a key solution.

"There is **broad agreement** that current trajectories towards the SDGs and countries' commitments under the Paris Agreement are slow and that **transformation of food systems is needed.**"

- IPCC. Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

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## Unsustainable food systems and greenhouse gas emissions

Food systems account for one third of global greenhouse gas emissions (GHGs). Even if we succeed in eliminating fossil fuel emissions, the current global food system, heavy in animal protein, would put the 1.5°C target of the Paris Agreement out of reach and would even make it difficult to stay below 2°C of global warming2.

Intensive animal farming is linked to high emissions and environmental impacts at all stages of production, far greater than other forms of agriculture. Livestock farming is responsible for 32% of total anthropogenic methane emissions3.These emissions stem primarily from enteric fermentation, a digestive process in ruminants, as well as manure management. Thus far, efforts to reduce these emissions have been focused on technical fixes, such as the usage of feed additives or the acidification of slurry. This fails to recognize the complexity of the pollution associated with animal agriculture, as livestock emissions go beyond methane. As the International Panel on Climate Change (IPCC) recognised in their latest assessment round, technological solutions to tackle the climate crisis will not be sufficient.

Around 40% of the world's arable land is used to produce feed crops for animals4. The conversion of natural ecosystems into croplands contributes to a rise in carbon dioxide emissions as these ecosystems no longer function as carbon sinks5. This scale of feed production to supply intensive animal farming and the demand for animal products is a key driver of deforestation in the Amazon6, also causing tremendous biodiversity loss. Fertilizer linked to feed production and manure management release high concentrations of nitrogen and contribute to 66% of anthropogenic nitrous oxide emissions, which are significantly more potent than carbon dioxide7.

**A just transition from industrial farming to small-scale, holistic animal farming systems is essential to achieving the Paris Agreement goals as well as helping to achieve many of the SDGs.**

## Farm animal welfare and sustainable development

Extensive production systems decrease the risk for the spread of pathogens, as they stock animals at a lower density and have more locally-adapted breeds. This diminishes the risk of contagious diseases and the use of prophylactic antimicrobials, in turn reducing the spread of antimicrobial resistance. A high genetic diversity in farmed animals forms the basis for environmental suitability, climate tolerance, disease resistance, fitness, and fertility, as well as the qualitative and quantitative performance of breeds. Better animal health results in higher productivity, making these extensive systems with higher welfare not only more sustainable, but more profitable. Contagious disease can dramatically affect farmers' incomes, impacts nutritional and food security and can impact global markets, for example if all animals need to be culled.8

Importing highly productive animals from Europe into hot climates to which they are not adapted will negatively impact animal welfare and health and thus milk and meat yield. This impacts livelihoods and the provision of nutrition for families. High yield breeds have poor fertility and shorter lifespans9 so put in sub-optimal conditions, they are a poor investment.10

The industrial production of animal products, particularly livestock, relies heavily on using human-edible food such as cereals as animal feed. The conversion of animal feed into animal protein is hugely inefficient. In fact, only 4 to 25% of the protein inputs as feed are converted into an animal product e.g. milk or meat11. Thus, if the protein plants that are fed to animals, or the arable land that is used for the cultivation of protein feedstuff, would instead be directly used for human consumption, more people could be fed. Studies have shown that if the cereals used as animal feed were used for direct human consumption, they could feed an additional 3.5 billion to 4 billion people each year.12 13

In a sustainable food system,14 ruminants are fed with hay and grass according to their behavioural and physical needs. Ruminants can play an important role in preserving grasslands as they are able to digest these high cellulose crops that humans cannot. Additionally, agricultural by-/waste products could be used for poultry or pigs as feedstuff15. Such a production system, rooted in lower consumption of animal products, where we overconsume them, would have far fewer negative externalities and contribute to a fair and equitable redistribution of food resources.

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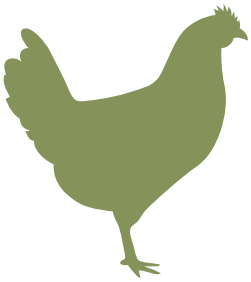


## Farm animal welfare and climate action

Climate change mitigation can be achieved through basic husbandry and welfare changes. Improvements in welfare, for example through reducing social stress, can directly contribute to greater feed intake in cattle and improved feed efficiency in pigs thereby improving production rates and can also be considered as a measure to mitigate greenhouse gas emissions16. Increased stress provoked by negative handling can also reduce milk and meat production.

In most intensive dairy production facilities, the lifespan of a cow is drastically short as they often suffer from poor health and welfare. Improved longevity would reduce the total lifetime emissions of dairy cows when accounting for the resources needed for rearing replacement animals. Both lameness and mastitis, which reduce milk yields, therefore creating more greenhouse gases per litre of product, can be reduced through simple welfare measures like improved housing. Together with longevity, an extended lactation can have an impact on emission of greenhouse gas by reducing the number of calvings which reduces numbers in beef cattle herds17.

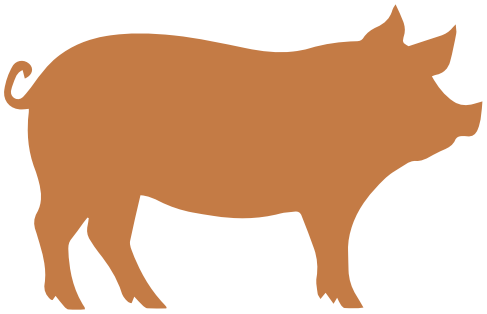
Intensive livestock production has significant consequences on the climate, which in turn renders food production even more vulnerable. Climate change impacts livestock directly, for example through heat stress and increased morbidity and mortality. Rising temperatures, salinized soils or drought can also impact the quality and availability of feed and forage. Animals are likely to be subject to increased and prolonged exposure to vector-borne diseases and parasites.

## Ecosystem service and holistic transformation

Smallholders, livestock keepers and pastoralists are among the most vulnerable to climate change, especially those in the Global Majority. Yet, the practices they employ have a lesser carbon footprint and can often mutually reinforce ecosystem services i.e. through sustainable water and soil management.

The IPCC recognises that agroecological principles and practices and "other approaches that work with natural processes support food security, nutrition, health and well-being, livelihoods and biodiversity, sustainability and ecosystem services."18 As well as supporting the outcomes of the SDGs, improving animal health and welfare, which is a key tenant of agroecology, can support environmental and climate protection aims, particularly when farms have lower densities of animals.

Grass-based and mixed-farm systems, which are less dependent on additional feed, have better capacities for carbon sequestration19. Well-managed grazing can improve soil organic carbon and nitrogen content, and therefore partially offset net greenhouse gas 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 have the potential to deliver better animal welfare conditions as they are conducive to natural behaviours such as grazing and rooting. These systems also support climate adaptation measures, as the presence of trees create microclimates, providing animals and crops with higher levels of humidity and shade. It also presents an opportunity for diversification of agricultural products.



## Maladaptation will not support sustainable development

Some of the greenhouse gas mitigation techniques that have been suggested, such as the use of feed additives and technological fixes to reduce methane emissions, tend to sustain intensive systems and therefore have negative impacts on animal welfare and do not bring about co-benefits such as rural development.

Maladaptive climate change responses such as switching from ruminants (i.e. cattle, goats and sheep) to monogastric species (i.e. chickens and pigs) in intensified production systems negatively impacts the environment through the generation of high levels of air, soil and water pollution. These systems also require more grain feed grown on arable land and are intrinsically detrimental to animal welfare20. Substantial emissions reductions can already be achieved by adapting current systems, to lower stocking densities and in general reducing the total number of animals reared, rather than requiring a further shift to industrialised farming.21

**These examples show how animal welfare is impacted by policies that intend to advance sustainability but fail to consider how improved animal welfare goes hand-in-hand with achieving the SDGs.**

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## To better integrate climate action and food system transformation into the SDGs. FOUR PAWS calls on governments to:

Recognise the interconnectedness between animal welfare and achieving the SDGs and mainstream the protection of animals into policymaking.

Reflect the need for food system transition in Nationally Determined Contributions (NDCs) so that they include ambitious pathways and targets for sustainable production and sustainable consumption of animal products.

Redirect climate and development funding as well as public subsidies and incentives to help farmers transition from intensive animal agriculture to farming systems based on agroecological principles.

## About FOUR PAWS

FOUR PAWS is the global animal welfare organisation for animals under direct human influence, which reveals suffering, rescues animals in need and protects them. Founded in 1988 in Vienna by Heli Dungler and friends, the organisation advocates for a world where humans treat animals with respect, empathy and understanding. The sustainable campaigns and projects of FOUR PAWS focus on companion animals including stray dogs and cats, farm animals and wild animals – such as bears, big cats and orangutans – kept in inappropriate conditions as well as in disaster and conflict zones. With offices in Australia, Austria, Belgium, Bulgaria, France, Germany, Kosovo, the Netherlands, Switzerland, South Africa, Thailand, Ukraine, the UK, the USA and Vietnam as well as sanctuaries for rescued animals in eleven countries, FOUR PAWS provides rapid help and long-term solutions.

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