Towards a humane and sustainable food system
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Cover image: An organic, free range, laying chicken farm in New Zealand. Credit: World Animal Protection
Towards a humane and sustainable food system

The suffering of billions of animals within factory farms around the world is too often overlooked or seen to be separate from the big issues of our day: pandemics and the public health crisis; climate change and biodiversity loss; food insecurity and malnutrition.

In reality, factory farming exacerbates these global problems as well as causing immense cruelty to billions of animals.

Factory farming hurts animals, people and our planet

Photo: Dead pigs in a dumpster along a road near an industrial pig farm, Canada. Credit: Planet in Peril – Where Science Gets Respect
World Animal Protection’s contribution to a humane and sustainable food system

World Animal Protection is building on our global campaigns to end the worst animal cruelty in factory farms worldwide.

We continue to build on and beyond our focus on the suffering of meat chickens and pigs to tackle the systemic change needed for all farm animals.

We take a unique and globally connected approach to our work for a better food system for animals, people and planet. We seek an end to factory farming: no new factory farms should be built by 2030 and existing farms should end the worst forms of animal cruelty.

Our mission is to:

• Expose the problem: We expose the suffering of animals behind the closed doors of factory farms and the hidden animal welfare, climate, environment and public health costs of an unsustainable food system from ‘feed to fork’.

• Enable the solutions: We engage and influence industry, regulators, and the community to hasten the transition to a humane and sustainable food system.

• Redirect financial flows: We follow the public and private finance flows propping up factory farming and push for them to be redirected to humane and sustainable foods.

• People-powered campaigning: We work with the groundswell of public concern relating to the food system’s impact on animals, people and planet, and work with allies to enable people to be part of the solution.

We work in the countries producing and trading the most factory-farmed animals, including China, US, Brazil and Europe. We also work in the places where factory farming is developing the quickest, including in Africa and Asia. We have thirteen offices globally.

Why there should be no future for factory farming

Animal cruelty

Denying the sentience of farm animals by locking them into cages, mutilating them, and pumping them full of antibiotics to prevent disease causes acute and chronic suffering, compromises food safety and leads to superbugs that can kill.

Globally, more than 72 billion chickens are reared and slaughtered for meat each year. Of these, more than two thirds are raised in intensive indoor systems where birds live in spaces smaller than a piece of paper, in windowless barns crammed with up to 100,000 animals. They spend most of their lives sitting or lying in their own waste. Genetic selection forces them to grow large unnaturally fast. These factors cause great distress and physical harm: they experience respiratory failure and sudden death; leg abnormalities; skeletal fractures and skin problems. Their oversized bodies prevent them from engaging in activities that they would otherwise enjoy.

Pigs are curious, sociable animals: they like to play and to investigate their environment. They have strong natural instincts to forage and to nest. Unfortunately, an estimated 600 million pigs live in intensive and confined conditions where none of these behaviours are possible. Mother pigs in factory farms spend their lives in cages too small to turn around in. They develop painful sores from the metal bars and the hard floor. They bite the bars of their cages in frustration. Piglets have their tails cut and teeth clipped, and the males are castrated, usually with no pain relief.

There are widespread and cruel practices across the range of farmed animals that must end, impacting egg chickens, dairy and meat cattle, and fish.

Photo: A calf is kept in a metal cage away from their mother at a dairy farm in Sri Lanka. Credit: Amy Jones / Moving Animals.
Damage to public health

Producing more than 50 billion factory farmed land animals each year\(^1\) to satisfy growing demand for cheap meat requires using breeds of genetically uniform animals squashed together, creating an ideal breeding ground for disease that can jump to humans. When diseases jump from one species to another, they often become more infectious and cause more serious illness and death, leading to global pandemics. Bird flu and swine flu are two key examples where new strains constantly emerge from intensively farmed animals.

Factory farms have been described as the “perfect breeding ground for the next pandemic”\(^4\). By keeping large numbers of genetically uniform animals in cramped, stressful environments, new viral pathogens can emerge and easily spread to humans. A 2020 United Nations report finds that intensive farming was responsible for more than half of all the infectious diseases that have transferred from animals to humans since 1940\(^5\). Between 1980 and 2013, there were over 12,000 recorded disease outbreaks affecting over 44 million people worldwide including bird flu and swine flu amongst others\(^6\).

Alongside impacting on human health and economy, disease outbreaks on farm lead to mass inhumane culling of animals by burning, burying alive or shutting off ventilation systems to cause suffocation.

Factory farming is also reliant on dangerous overuse of antibiotics, with up to 75% of the world’s antibiotics going to farm animals\(^7\). Antibiotics are administered to groups of animals to prevent them getting sick in dismal conditions, or to speed their growth for profit.

Even though there is strong evidence that higher welfare environments can reduce the need for antibiotics\(^8\)\(^9\)\(^10\)\(^11\), factory farms continue their irresponsible use—increasing the risk of superbugs (antibiotic resistance) in people. This problem is so severe that the World Health Organization (WHO) has identified antibiotic resistance as one of the top 10 global threats to human health\(^12\). Already more than 700,000 people die each year from antibiotic resistance, and conservatively this is estimated to rise to at least 10 million people each year by 2050\(^13\).

Workers in factory farms or slaughterhouses are on the frontline of exposure to antimicrobial resistant bacteria, environmental toxins leading to respiratory illnesses as well as ergonomic injuries\(^14\)\(^15\).

Damage to biodiversity and climate

Clearance of habitat for crops or pasture has been the biggest factor in biodiversity loss over the past 50 years\(^16\). This means displacement, suffering and death for wild animals. Factory farming is especially destructive as roughly one-third of arable land globally is used to produce animal feed for cruel factory farms\(^17\). Growing and trading enough feed to keep billions of farm animals alive means destruction of habitat, wild animal suffering, and a significant climate footprint. Habitat clearance for agriculture also increases disease transfer between species and to humans, as wild animals come into greater contact with people and domestic animals\(^18\).

Greater attention should be paid to factory farming’s contribution to the climate crisis. While the focus is often on greenhouse gas emissions from beef, the scale and growth rate of factory farmed poultry and pigs is higher. Pork and chicken produce 20-25 times the greenhouse gas emissions than soy products\(^19\).

Other ecological threats from factory farming include excessive water use and contamination from pesticides and manure. Around one-third of global water use is related to animal production\(^20\). Every year approximately 1.3 million tonnes of pesticides are used to grow crops destined for animal feed. Fertilisers and manure are linked to more than 400 dead zones in rivers and oceans throughout the world—places where nothing can live\(^21\).

Food insecurity, community displacement and malnutrition

Agricultural intensification leads to cheaper food, which is often thought to support food security. However, negative impacts on animals, nature and people abound. A ‘race to the bottom’ develops as the availability of cheap animal protein boosts further demand. Ever-increasing yields are sought in the face of dwindling land and a lack of local control over food security. Cheap prices and high yields are ultimately unsustainable.

The United Nations recommends subsidies that underpin intensive agriculture be removed and support put behind agroecological food systems\(^22\).

In the current system, food security is undermined as land is diverted to crops to feed animals destined for consumption, rather than humans.

Smallholder farmers and local communities have had their lands violently stolen for conversion to use for animal agriculture\(^24\)\(^25\). Smallholder farmers also struggle to compete in an increasingly corporatized food value chain\(^26\)\(^27\). This can mean an exodus to the city and a lack of local control over food security.

Factory farming also entrenches inequalities in diets and access to food. Eating too much cheap animal protein in some parts of the world leads to obesity and chronic illness whilst large numbers of people are malnourished and protein deficient in low and middle-income countries\(^28\).
The United Nations has warned against further agricultural intensification. Leading researchers argue in favour of a fundamental reduction in demand and supply of animal products to bring the food system into a sustainable equilibrium.

A humane and sustainable food system would mean an end to factory farming. In the first instance, a moratorium on new factory farms being built.

Ultimately, a fundamental shift is required in global diets to a predominantly plant-based food system, with a smaller number of animals produced in high welfare systems where their full needs can be met.

An equitable transition is also important, with access to sufficient, high welfare animal protein for people in low and middle-income countries. Alternative livelihoods will also be needed for workers within the factory farming supply chain.

Photo: Plant-based proteins play an increasing role in humane and sustainable diets.
Towards a humane and sustainable food system

There are three important aspects to a humane and sustainable food system:

- Halving animal protein by 2040 moving to a predominantly plant-based food system.
- Ensuring remaining farm animal production is within systems where resource use is sustainable, and benefits flow across the value chain and to local communities.
- Ensuring remaining farm animals are in high welfare systems where their physical, environmental and behavioural needs are met. Systems prioritise the Five Domains of Animal Welfare with positive nutrition, environment, health, and behavioural interactions leading to positive mental states.

What is a humane and sustainable food system?

**HUMANE Animal Production**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nutrition (food &amp; water availability + variety)</td>
</tr>
<tr>
<td>2.</td>
<td>Physical environment (space, flooring, atmosphere, odours, temperature, noise and light)</td>
</tr>
<tr>
<td>3.</td>
<td>Health (injury, disease, physical fitness – genetics &amp; painful procedures)</td>
</tr>
<tr>
<td>4.</td>
<td>Behavioural interactions (with the environment, other animals, humans)</td>
</tr>
<tr>
<td>5.</td>
<td>Mental States (as a result of domains 1-4, e.g. comfort, pleasure, interest and confidence)</td>
</tr>
</tbody>
</table>

**SUSTAINABLE Animal Production**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ecological food and feed (for humans and animals, i.e. no food-feed competition, wildlife harm)</td>
</tr>
<tr>
<td>2.</td>
<td>Biodiversity of plants &amp; animals (locally adapted, climate resilient breeds with genetic diversity, production systems align with the natural environment maximising carbon sequestration)</td>
</tr>
<tr>
<td>3.</td>
<td>Responsible resource use (habitats, land, water, soil, energy, antibiotics, waste reduction, pesticides, fertilisers + technology, minimise GHG emissions, avoid harm to wildlife)</td>
</tr>
<tr>
<td>4.</td>
<td>Food resilience and sovereignty (all society rather than vertically integrated corporations take control, adaptable to ‘shocks’)</td>
</tr>
<tr>
<td>5.</td>
<td>Benefitting society (food security, nutrition, rural development, livelihoods, one health, one welfare)</td>
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**1. Ecological food and feed** (for humans and animals, i.e. no food-feed competition, wildlife harm)

- Animals are not fed human-edible crops or housed on land suitable for the production of human-edible crops, meaning fewer animals produced so fewer animals suffer.
- The use of local, seasonal animal feed means more variety with greater interest and pleasure for animals.

**2. Biodiversity of plants & animals** (locally adapted, climate resilient breeds with genetic diversity, production systems align with the natural environment maximising carbon sequestration)

- Genetic selection prioritises welfare over production traits making animals better adapted to cope with the local conditions so they experience better welfare.
- Animals better able to cope with the environmental conditions are more likely to survive extreme environmental conditions and diseases meaning fewer suffer.

**3. Responsible resource use** (habits, land, water, soil, energy, antibiotics, waste reduction, pesticides, fertilisers + technology, minimise GHG emissions, avoid harm to wildlife)

- Animals produced and consumed locally benefit from short transport distances.
- Responsible antibiotic use means animals are raised in healthy environments.
- Genetic modification or technology that enables factory farming to continue is avoided.
- Animals are housed in environments better suited to their natural behaviour.
- The use of dual-purpose breeds (meat and milk cows or meat and eggs chickens) means less suffering and no waste for male layer hen chicks and dairy calves.

**4. Food resilience and sovereignty** (all society rather than vertically integrated corporations take control, adaptable to ‘shocks’)

- Smaller scale, more localised food systems means people are more connected to their food and conscious of animal welfare.
- Farm decision makers are those responsible for taking care of the animals directly so prioritise the needs of the animals as well as financial sustainability.

**5. Benefitting society** (food security, nutrition, rural development, livelihoods, one health, one welfare)

- A good life for animals benefits wider society through better health and well-being.
- High welfare conditions for animals creates better working conditions for farmers and animal carers. Animals in high welfare conditions, adapted to the local conditions are more productive, higher quality, making them healthier for consumers and provide a good living for the farmers.
Where factory farming continues to exist

For as long as factory farms remain and until such time as more sustainable systems are scaled up, every effort must be made to reduce the worst suffering of farm animals and to redress the animal welfare, environmental and public health impacts.

The Farm Animal Responsible Minimum Standards (FARMS, see table on page 10) outline the minimum standards in relation to animal welfare in factory farming. FARMS is co-developed by World Animal Protection, Compassion in World Farming and Humane Society International with reference to benchmarks including the International Finance Corporation’s Good Practice Note and aligned with the European Better Chicken Commitment.

Where factory farms exist, FARMS should be used to improve farm animal welfare. New factory farm systems should not be built. Instead, the food industry should transition to humane and sustainable systems with the support of private and public funders.
Who should do what?

The food industry, its financial backers, governments and intergovernmental organisations have a responsibility to support the transition to a humane and sustainable food system.

Global food retail and animal protein production sectors should:

• Meet FARMS animal welfare requirements for production or procurement as a minimum. Develop an overarching animal welfare policy informed by the Five Domains model that lead to a Good Life for farmed animals.
• Commit to using antibiotics responsibly in farming: ending the routine use of antibiotics including to promote fast growth and to prevent disease across groups. Antibiotic use must be reduced by addressing underlying welfare issues, and not through pursuing ‘antibiotic-free’ or ‘no antibiotics ever’ or ‘raised without antibiotics’ policies or product lines. This can create a disincentive for producers to treat sick animals and harm animal welfare.
• Increase the proportion of plant-based protein options to support an average global reduction in meat production and consumption of 50% by 2040, and publicly document progress.
• Publish annual reports on their progress towards implementing high welfare commitments in conjunction with antibiotic use data on supplier farms.
• Ensure traceability to the point of origin with animal feed supply chains and phase out the use of commodity animal feed.

Financial investors in food systems should:

• Require companies to meet FARMS animal welfare requirements as a minimum. Phase in requirements for companies towards systems informed by the Five Domains welfare model that lead to a Good Life for farmed animals.
• Require companies to commit to using antibiotics responsibly in farming: ending the routine use of antibiotics including to promote fast growth and to prevent disease across groups. Antibiotic use must be reduced by addressing underlying welfare issues, and not through pursuing ‘antibiotic-free’ or ‘no antibiotics ever’ policies or product lines. This can create a disincentive for producers to treat sick animals and harm animal welfare.
• Increase the proportion of plant-based protein in the investment portfolio to support an average global reduction in meat production and consumption of 50% by 2040, and publicly document progress.
• Influence policy such as supporting regulations on corporate and financial services sustainability disclosures, frameworks to facilitate sustainable lending, due diligence processes, and antibiotic use.
• Ensure traceability to the point of origin within the animal feed supply chain, screen and engage companies, exclude clear offenders and demonstrate transparency and zero tolerance for deforestation. Phase out financial support for commodity animal feed.

Governments and intergovernmental organisations should:

• Introduce and enforce regulations in line with FARMS animal welfare requirements as a minimum.
• Introduce and enforce regulations ending the routine use of antibiotics including to promote fast growth and to prevent disease across groups.
• Commit to national surveillance and public reporting of antibiotic use at farm level in conjunction with reporting on welfare practices on farms.
• Redirect industry subsidies and financial incentives to high welfare systems that align with the Five Domains welfare framework and in support of an average global reduction in meat production and consumption of 50% by 2040.
• Introduce and enforce regulations that ensure traceability to the point of origin within the animal feed supply chain and zero tolerance for deforestation.
Towards a humane and sustainable food system

The Farm Animal Responsible Minimum Standards (FARMS) outlines minimum welfare standards for existing industrial farms, covering beef cattle, chickens raised for meat (broilers), dairy cattle, laying hens and pigs. They were developed by World Animal Protection, Compassion in World Farming and Humane Society International with reference to leading global frameworks and standards and the most recent science on behavioural needs of farm animals. FARMS outlines welfare risks and mitigation strategies to address those risks.

Information in the table below is adapted from the principles of the FARMS, and the Responsible Minimum Standards for beef cattle, broilers, dairy cattle, layer hens, pigs.

<table>
<thead>
<tr>
<th>Welfare risks</th>
<th>Mitigation strategies</th>
<th>Farm animals included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitation on space - individual stalls, crates or cages restricting the movement of animals and overcrowded conditions increasing disease transmission and injurious contact with others</td>
<td>Increasing the space allowances (e.g. moving away from individual to group housing) and allowing animals to stand, stretch, turn around, sit, and/or lie down comfortably at the same time. Stocking densities low enough to prevent excessive temperatures and humidity, competition, stress, aggression, and abnormal behaviour, and to enable good litter management</td>
<td>Beef cattle, broilers, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Barren and unsuitable environments - unstimulating environments leading to behavioural problems</td>
<td>Providing environmental enrichment (e.g., straw for pigs to manipulate, nest boxes for hens, perches and pecking materials for broilers and hens, brushes and chewable materials for dairy cows or calves) to stimulate positive emotional states</td>
<td>Beef cattle, broilers, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Inappropriate diets - feeding diets that do not satisfy hunger</td>
<td>Adding bulk to high energy diets to help satisfy appetite</td>
<td>Beef cattle, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Painful husbandry procedures - injurious husbandry procedures that cause pain</td>
<td>Alternatives to routine painful procedures (e.g. dehorning/disbudding, branding, castration, tail-docking, beak trimming) or effective pain relief</td>
<td>Beef cattle, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Breeding and genetics - breeding for production traits that heighten anatomical or metabolic disorders</td>
<td>Re-aligning production-orientated genetic selection to include welfare traits</td>
<td>Beef cattle, broilers, dairy cattle, pigs</td>
</tr>
<tr>
<td>Animal specific welfare issues - lameness and mastitis for dairy cows and early weaning for pigs</td>
<td>Effective management programs in place to minimise mastitis (to &lt; 25 cases/100 cows) and lameness (to &lt; 10%)</td>
<td>Dairy cattle</td>
</tr>
<tr>
<td>Piglets weaned at the age of 28 days or later.</td>
<td></td>
<td>Pigs</td>
</tr>
<tr>
<td>Transport</td>
<td>Minimise the distance and time taken for animal transportation, and animals slaughtered as close as possible to the farm to minimize the transport stress</td>
<td>Beef cattle, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Slaughter</td>
<td>Animals handled, restrained, rendered unconscious until death, and slaughtered in the least distressing and most pain-free manner possible by trained and competent staff</td>
<td>Beef cattle, broilers, dairy cattle, layer hens, pigs</td>
</tr>
<tr>
<td>Compliance and transparency</td>
<td>Demonstrate compliance with the standards via annual third-party auditing and annual public reporting on progress.</td>
<td>Beef cattle, broilers, dairy cattle, layer hens, pigs</td>
</tr>
</tbody>
</table>
The Five Domains model is a scientific framework designed to assess animal welfare. The model consists of four physical/functional domains and the fifth domain, mental state. The fifth domain (mental state) represents the animal’s experience of the four physical/function domains and defines their welfare state.

Industrial farms systems lack opportunities for animals to experience a predominance of positive mental states. Transforming the food system to become humane and sustainable has the potential to provide greater opportunities for animals to experience positive mental states.

2. According to the UN (2017), globally, intensive farming accounts for 72% of poultry (majority chicken), 42% of eggs, and 55% of pork. https://www.theguardian.com/environment/2017/jul/18/rise-of-mega-farms-how-the-us-model-of-intensive-farming-is-invading-the-world

3. We estimate this figure as a minimum based on FATstat figures (2019 global livestock production primary slaughtered/commodities) and the UN (2017) figures of global intensive farming accounting for 72% of poultry, 42% of egg, and 55% of pork noting intensive beef and dairy would be additional. It is unclear if 'poultry' includes ducks and turkeys or just meat chickens, and if not, these would be additional where intensively reared. These percentages would have increased since 2017 due to the increased intensification of farming in emerging markets. https://www.theguardian.com/environment/2017/jul/18/rise-of-mega-farms-how-the-us-model-of-intensive-farming-is-invading-the-world


13. Review on Antimicrobial Resistance. Antimicrobial resistance: tackling a crisis for the health and welfare of nations. Chaired by Jim O’Neill. 2014. Available from: https://amr-review.org/sites/default/files/AMR%20Review%20Paper%20%20Tackling%20a%20crisis%20for%20the%20health%20and%20welfare%20of%20nations_1.pdf (Comparatively: 2050 global prediction of cancer toll 8.2 million, 1.5 million diabetes annually). This is a pivotal independent review that has been subsequently academically by Brogan and Mossialos (2016) Comparatively: 2050 global prediction of cancer toll 8.2 million, 1.5 million diabetes annually. 4 key operations were considered as example: caesareans, cancer treatments, hip replacements, organ transplants.


16. Benton et al, Food system impacts on biodiversity loss / Three levers for food system transformation in support of nature, Chatham House / The Royal Institute of International Affairs, Feb 2021

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22. Benton et al, Food system impacts on biodiversity loss / Three levers for food system transformation in support of nature, Chatham House / The Royal Institute of International Affairs, Feb 2021


28. Benton et al, Food system impacts on biodiversity loss / Three levers for food system transformation in support of nature, Chatham House / The Royal Institute of International Affairs, Feb 2021


30. Benton et al, Food system impacts on biodiversity loss / Three levers for food system transformation in support of nature, Chatham House / The Royal Institute of International Affairs, Feb 2021


32. Good Life: To define a ‘good life’ we look to opportunities for mostly positive experiences or welfare outcomes across the life of animals. Positive welfare includes comfort, pleasure, interest, vigour and confidence, feelings of satiation, calmness, opportunities to play and learn with freedom of choice. These are linked to inputs such as bedding and enrichment, abundant space, temperature zones, variable food presentation and formulation, nesting opportunities, positive social interactions, humane death, positive stockperson interactions, appropriate breeding/genetics and the highest level of veterinary care. Overall, animals have freedom of choice and haye more of what they want in addition to what they need to function in terms of meat, milk or egg production.

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34. Mellor DJ, Beausoleil NJ. Extending the “Five Domains” model for animal welfare assessment to incorporate positive welfare states. Anim Welf. 2015;24:241 - 53.
