



Animal Welfare.
Worldwide.

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Department of Agriculture, Fisheries and Forestry

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Agriculture and Land Sectoral Plan

The need for higher ambition

Climate change is already affecting Australia's producers and the environment. Reducing emissions is critical for reducing future climate risks for the agriculture and land sectors, as well as ensuring our industries are well-placed to compete in global markets. Australia is committed to taking action on emissions and both the agriculture and land sectors have an important role to play in supporting our national contribution to global efforts. (Page 9).

What are the opportunities to reduce emissions and build carbon stores in agriculture and the land? What are the main barriers to action?

One of the most effective measures to decrease the climate impact of our food system is to reduce the number of animals being farmed. The climate crisis is an opportunity to rethink food and farming and to catalyse a transition to a food system that benefits planet, animals and humans. By far the biggest environmental benefits can be achieved by dietary change – compared to technical fixes. It would halve the greenhouse gases (GHG) emissions caused by the food system, drastically reduce land use and deforestation, and have several other environmental benefits (e.g., reduced water pollution). If we focus on GHG other than carbon dioxide (CO₂) gases, animal farming is the biggest contributor to the two other major sources of anthropogenic GHG emissions: methane (CH₄) responsible for 44% of emissions - and nitrous oxide (N₂O) - constituting 53% of emissions. Both CH₄ and N₂O are more potent than CO₂, being 80 times and 300 times more dangerous for global warming, respectively.

A 2022 scientific study by Eisen and Brown, concluded that phasing out intensive animal agriculture by the end of the century, will have the same impact on global warming as reducing annual CO₂ emissions by 25 gigatons. This would account for half the emission reductions needed to fulfil the Paris Agreement.

Intensive, heavily industrialised animal production systems, also known as factory farms, represent a major emitter of GHG. These farming systems have a high dependency on grains for feed and synthetic fertilisers. They are also a major source of GHG emissions from animals, manure management, and land expansion for pasture.



Animal Welfare.
Worldwide.

Animal welfare is severely compromised in factory farms, due to the lack of opportunity to express species-specific behaviours, increased susceptibility to diseases, and use of intensively genetically selected breeds which are more prone to stress, such as heat stress. Therefore, a great opportunity for Australia to reduce GHG emissions from the agricultural sector is by reducing the production of meat and putting animal welfare at the centre of action, with a consequent reduction in the number of farm animals.

Australia has one of the highest rates of meat consumption, with more than 120 kg consumed per capita in 2020. In 2023, about 76% of all agricultural land was used for grazing. Animal production, especially beef cattle, is the main driver of land clearing in Australia.

This is having a major impact on threatened species. Of the 7.7 million hectares of land habitat cleared between 2000 and 2017, 7.1 million hectares (93%) was not referred to the Australian Government for assessment under the Environment Protection and Biodiversity Conservation Act 1999. In 2022, feedlot cattle made up 47% of all adult cattle slaughtered in Australia. Notably, the 2022 figure of 47% is 11% above the 10-year average.

In 2021, Australia was the fourth biggest beef exporter, and the largest exporter of sheep meat worldwide. The cattle and poultry meat industries have increased in the past decades, together with the production of grains for animal feed. A report commissioned by AEGIC (2022), suggests this rising trend will continue in upcoming years. By 2040, the demand for feed grain is expected to increase by 2.94 mmt due to population growth and higher demand for animal products. The increased production of grain feed brings additional environmental risks because Australia is an exportation hub for many parts of the world, especially East and Southeast Asia.

How can we progress emission reduction efforts whilst also building resilience and adapting to climate change?

The breeding of animals by factory farming focused on specific traits (e.g., high milk yield, daily weight gain, egg production) has originated high-performance breeds. This intensive genetic selection puts pressure on visceral systems and normal physiology, which has detrimental effects on the welfare and health of animals and makes these animals less resilient. It is also known that there is a trade-off between productivity and the development of the immune system, with highly “efficient” breeds being more susceptible to diseases and less resistant to thermal stress compared to slower growing, locally adapted breeds. In addition, factory farms do not promote genetic diversity, and this homogenous genetic pool facilitates the spread and adaptation of pathogens, including zoonotic ones.

High-performance breeds require high intakes of concentrated feed, which in turn requires more feed production which is one of the main drivers of land-use change, deforestation and biodiversity loss worldwide. Although highly concentrated feed may decrease the emissions of CH₄ per animal, when balanced with the release of CO₂ and N₂O from increased feed production and processing, this decrease



Animal Welfare.
Worldwide.

may be insignificant. Approximately 45% of livestock-related emissions are caused by these processes. Additionally, with the current animal numbers worldwide, the global CH₄ emissions are too high. Animal production systems highly dependent on grains are heavily affected by price fluctuation and availability of these grains.

Therefore, progress can be achieved with the transition to slow-growing and native and locally adapted breeds, benefiting not only the environment, but also animal welfare and public health. Aside from opting for native breeds, to improve animal welfare and environmental sustainability, a return to dual-purpose breeds is urgent.

As a global animal welfare organisation with major ongoing concerns regarding the legalised treatment and standard practices of animal husbandry in Australia, we do not support the exploitation of animals within these systems for human profit and benefit. However, if these farming systems are to continue, at a minimum it is advisable that certain native and locally adapted, and dual-purpose breeds are to be used within the system that is most appropriate for their welfare.

Building on existing effort and knowledge

There has already been significant action taken by industry, governments, First Nations peoples, local and regional communities to address climate change. (Page 12)

Are there initiatives or innovative programs underway that could be applied or expanded on at a national scale?

N/A

How can the Australian Government bring together existing effort and new initiatives into one coordinated plan?

If the Australian Government are to succeed, it is essential that the new initiatives are part of a holistic solution. Solitary actions fail to consider the multitude of factors that the climate and environmental crises entail. For instance, carbon farming – understood as soil carbon sequestration – has been gaining a growing interest, despite its limited effect on climate mitigation. In short, the storage of carbon is very slow; is decreasing over time (even increasing temperatures can release sequestered carbon); can unintentionally increase emissions in other land due to displacement of agricultural production (carbon leakage); is reversible; and difficult to measure. Scientists estimate that carbon farming can only be relevant as a solution to marginal emissions that cannot be avoided after all possible reduction measures are taken. Furthermore, even if these concerns are ignored, focusing exclusively on capturing carbon via farming practices does not contribute to solving the other problems caused by factory farming – such as soil health or environmental pollution – and might even exacerbate them.



Animal Welfare.
Worldwide.

A systemic problem needs a system solution. Carbon farming, and any other initiative, must be considered together as part of an organised plan to transition to a new farming model with agroecological principles.

The One Health concept should be a key pillar of this coordinated plan to tackle the climate crisis by the Australian Government. Animal welfare, human well-being and environmental protection are deeply interconnected. Anthropogenic activities associated with intensive farming and environmental degradation exacerbate the risk of future pandemics, threatening human health. By improving the welfare of farm animals, we can increase the world's food resources to feed the global population, tackle the climate crisis and reduce the risks of the next pandemic originating from farmed animals.

Opportunities to reduce emissions

Looking in more detail, there are technologies, practices and other measures that can reduce emissions and increase carbon stores. Some are established and others are still emerging. (Page 15).

What are the most important options to be further adopted or supported, looking in the short and the longer-term?

The most important measure to adopt is reducing the number of animals farmed. Such reduction will decrease the emissions of GHG directly and indirectly associated to intensive farming. Several studies have related prevalent cattle health issues (e.g., mastitis, lameness, and subclinical ketosis) in intensive farming with an increase in GHG emissions per animal, especially CH₄ by enteric fermentation. Important measures to improve animal production systems with a potential impact on GHG emissions include:

- Implementation of area-based animal husbandry systems, meaning that no more animals may be kept on the farm than can be fed from the farm's own land, and that the farm's soil can absorb the manure produced.
- Provision of sustainably managed pasture access to animals. For example, beef cattle raised in grassland, has a lower environmental impact compared to feedlot cattle; and reduce the need for feed systematically dependant on mineral fertilizers responsible for most N₂O emissions. Pasture-based systems should be accompanied by a reduction in grazing animals to limit expansion of pasture beyond sustainable numbers.
- Implementation of mandatory guidelines for sustainable pasture management with regular checks on the use of the entire pasture area and soil quality.
- Provision of public funding to help farmers transition to more sustainable systems. An indication of what kind of farming model is wanted by the Australian government must be made, and subsidies for unsustainable practices should be redirected towards the green transition.



Animal Welfare.
Worldwide.

- Improved housing of animals according to their basic species-specific needs and natural behaviours which favours their health and welfare, improving their immune system and productivity.
- Improved diet focusing on the animals' natural nutritional needs, which protects their health, modifies the composition of manure and reduces its GHG release potential.
- Improved manure management favouring pasture-based animal husbandry or dry-manure storage (e.g., in stacks or pits), as liquid manure systems promote anaerobic conditions and increase CH₄ emissions.
- Ban on fully slatted floors. Not only is this flooring bad for the animals' welfare, but these housing systems predominantly store liquid manure for long periods of time, favouring the release of CH₄ and NH₃. The latter can then be converted and released into the atmosphere as N₂O.
- Transition from single purpose breeds to dual purpose breeds and ban on high-performance breeds.
- Extension of the lifetime of farm animals. For example, increasing the production time of dairy cows by two lactations would reduce methane emissions by 20%.

What are the practical solutions to increase uptake?

Strategies such as more appropriate animal diets, the implementation of silvopastoral systems and other practices with the capacity to improve soil quality and cover, and the use of nitrogen-fixing plants are among the solutions with more potential to reduce emissions from manure and at the same time contribute to increased carbon capture and improved food production.

Developing emissions pathways

The plan will explore different ways for agriculture and land to contribute to whole-of-economy emission goals, whilst also delivering on national priorities that include a profitable and productive future for agriculture, and sustainable management of Australian landscapes. (Page 21)

How do you see the agriculture and land sectors contributing over the medium and longer-term? What are the opportunities to deliver emission reductions in parallel with wider goals?

The agricultural sector's primary goal must be to ensure food security and fair incomes for farmers, while contributing and benefiting nature by understanding synergies and ecosystem services. Optimism around the mitigation capacity of carbon farming must be brought back to reality: a carbon market based on offsets is neither environmentally nor economically viable.

As discussed previously, carbon farming has too many limitations to be a key solution to the climate crisis, the main one being that carbon is not permanently captured and can be easily released back to the



Animal Welfare.
Worldwide.

atmosphere. Therefore, hoping that this residual capture of CO₂ can offset emissions from other sectors is not realistic and would only allow polluting actors to continue business as usual. Economically, a carbon offset market is also not feasible. To accurately measure sequestered carbon, farmers need to invest considerably in technology and methodologies. This heavy investment is met however, with a highly speculative market, making carbon farming an unlikely reliable source of income for them. Furthermore, it can also promote land-grabbing by corporations seeking financial gains in a new market. Therefore, the only way to guarantee a sustainable income for farmers is via public funding that supports a better approach to agriculture.

Therefore, carbon capture cannot be a distraction from the need to reduce emissions in most sectors. In the case of the agriculture sector, a major part of the emissions could be avoided with the reduction of farmed animals.

Supporting and enabling change

The plan will explore ways in which the Australian Government can help to accelerate emissions reduction in agriculture and increase carbon storage in the land. (Page 24)

How can the Australian Government better support agriculture and land sectors to:

- a. **drive innovation**
- b. **build capacity**
- c. **ensure the system enables emissions reductions**

Measures by the Australian Government to support sustainable agriculture and land sectors should be focused on the following strategies:

- Re-orientate public policies, subsidies and investments to help farmers transition from harmful agricultural practices towards agroecological and regenerative farming systems.
- Establishment of long-term cooperation and purchase guarantees for farms that comply with sustainability and animal welfare standards.
- Increase in research funds for climate- and animal-friendly agriculture.
- Innovations and research in the field of animal husbandry must always show benefits for animals and the environment to receive public funding.
- Support for the implementation of successful research projects that benefit animals and the environment.
- Ensure true-cost pricing with the introduction of an additional charge on animal products, with the revenue going towards better animal welfare.
- Transparency for consumers with mandatory labelling of origin and animal welfare for animal-based products.



Animal Welfare.
Worldwide.

What new initiatives could the Australian Government design that would support emissions reduction and carbon storage in agriculture and land and help ensure a productive, profitable, resilient and sustainable future for the sectors?

It is fundamental that a reduction of farmed animals takes place to bring the numbers within planetary boundaries. That could be achieved by establishing rules that aim at area-based farming, ensuring that only the number of animals that can be sustained on the land (sufficient food, not excessive waste, etc.) can be kept, and by redirecting funding to only contribute to sustainable farming practices.

The Australian Dietary Guidelines state the two most consumed food categories should be grain foods, and vegetables, legumes and beans. These indications are followed by less than 10% of the Australian population. Therefore, the Government should acknowledge the importance of reducing meat and dairy consumption and promote the benefits of a plant-rich diet that protects human health and nature.

Additionally, the Australian Government should incentivise higher animal welfare production systems, highlighting the importance of transitioning into sustainable and healthy food systems that consider every process of the food chain. The above can be incorporated into the adoption of a “3Rs Principle”:

- Reduce animal products.
- Refine food choices which promote high animal welfare standards.
- Replace products from animal origin with plant-based alternatives.

Other initiatives possible to be developed by the Australian Government to promote sustainable food supply chains include:

- Gradual adjustment of the value added tax on food products with the aim of making plant-based products more affordable through lower taxes.
- Mandatory animal welfare and sustainability standards for public procurement.
- Incentives for private institutions to implement animal welfare and sustainability standards and offer a wide range of plant-based foods.
- Halt financing the promotion of consumption of meat and dairy products, diverting funds to increase the uptake of grains, legumes, nuts, fruit and vegetables.
- Increase in research funds for the development of plant-based and innovative food products such as cultivated meat.
- No additional legal barriers for innovative food products such as cultivated meat.
- Establishment of an independent national commission for animal welfare, and the creation of ministerial portfolios for animal welfare. This would separate animal welfare from agriculture portfolios, and allow for unbiased and independent management of animal welfare that reflect contemporary science and meet community expectations.



Animal Welfare.
Worldwide.

A consistent and trusted approach for assessing and reporting emissions is often raised as a barrier to reducing emissions. Is there a role for the Australian Government in addressing this concern, and how can producers and land managers be supported?

Accurate monitoring, reporting and verification is essential for effective climate policy. The Government must put in place a clear system that ensures farmers know what exactly is expected of them and enable knowledge share across the sector and to all stakeholders for full transparency and accurate reporting.

Q: What skills, knowledge and capabilities do you think producers and land managers need to implement change? What information and data would help them make decisions about emissions reductions and sustainable land management in the short and longer-term?

Farmers are among the first to experience and observe the effects of environmental pollution and climate change. For instance, they understand the importance of soil health to produce food. However, the current intensive animal farming system forces a dependence on artificial fertilizers and overuse of antibiotics. Therefore, it is important to create an environment in which farmers can share their learnt experiences and best practices on establishing sustainable and species-appropriate farming models. Additionally, the following points should be emphasised as necessary to have a proper understanding of the food system:

- Awareness of the link between intensive farming, poor animal welfare and environmental pollution; and, of the consequences of climate change on animal production systems if “business as usual” remains the norm.
- Education on human-animal positive interactions, as negative human experiences is one of the leading causes of animal stress within intensive farming, which hinders their immune capability.
- Acknowledgement of the benefits of raising pasture-based animals such as economic sustainability, reduced feed costs, high animal health and welfare, among others.
- Updating the curricula of agricultural schools and agricultural universities with a focus on animal- and environmentally-friendly agriculture.

Do you have any additional views or feedback that you would like to include in your response?

The most effective way to tackle the climate crisis is addressing it by the root. **A significant reduction in the number of farmed animals is needed.** This is closely linked to better husbandry systems based on excellent animal welfare standards.

This must be accompanied by adequate political, legislative and financial incentives.

Technological mitigation strategies (e.g., feed supplements) may be part of the solution but should not be at the forefront of adaptation and mitigation plans. The real impact of such alternatives –when applied individually or combined - needs further research on animal health and on long-term impacts on GHG



Animal Welfare.
Worldwide.

emissions. The financial viability and feasibility of such mitigation strategies in the Australian animal agriculture context raises questions and may not occur with the urgency that tackling the climate crisis requires. In addition, the mitigation strategies do not focus on issues such as land-use change, deforestation and animal welfare, which are critical elements to address if we aim to achieve net zero emissions by 2050.

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, 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, animals in fashion, 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. www.four-paws.org.au