



Animal
Medicines
Australia

The role of animal health in addressing the challenges associated with climate change





Improving animal health offers a cost-effective and sustainable opportunity for livestock industries to reduce emissions and manage climate risks.

- In addition to the significant productivity and sustainability benefits, healthy animals produce less emissions of key climate gases, including carbon dioxide and methane.
- Improved animal health associated with disease prevention and treatment can reduce mortality rates, and associated emissions.

Federal and State governments should recognise and incorporate animal health improvements made by livestock industries within climate change policy frameworks and emissions auditing systems.

- Incorporating animal health benefits will avoid market distortions in investments that may result in negative animal health and welfare outcomes.

Sustainability frameworks developed by livestock industries should include climate emission reductions achieved through adoption of better animal health practices and technologies.

- Empower livestock industries and farmers to achieve their own emissions reduction targets and contribute to industry carbon neutrality goals consistent with the goals and objectives of their industry.
- Recognising the contribution of improved animal health to emissions reduction will assist the National Farmers Federation and livestock RDAs (e.g. MLA) reach their respective carbon neutrality goals.

Regulatory frameworks for animal health products should be streamlined to accommodate legitimate, science-and evidence-based climate product claims.

- These should be regulated consistently with other frameworks dedicated to environmental sustainability product claim and comply with Australian Consumer Law (e.g. misleading or deceptive conduct provisions).
- While this would not be regulated by the APVMA (no animal health claim), the APVMA must recognise these label statements and the authority of any regulatory or stewardship program that oversees their implementation.

A One Health response is required to monitor and predict both direct and indirect biosecurity and disease preparedness risks associated with climate change.

- Animal health industries need to be included in all aspects of policy formulation, planning and implementation related to biosecurity and disease preparedness.



Introduction

In the next 30 years, the global population is expected to increase from 7.7 billion to 9.7 billion in 2050, with the population in Australia and New Zealand projected to increase by 28 per cent.

To meet the growing demands for animal protein, both domestically and for our important export markets, Australian livestock farmers will be required to improve productivity while reducing their environmental impact.

Healthy animals produce more meat, milk and eggs and require less resources. Conversely, animal diseases are a direct threat to healthy diets, making nutrient-dense food more scarce and more expensive. The World Organisation for Animal Health (WOAH) estimates that more than 20% of animal production worldwide is lost as a direct result of disease.²

Every animal lost to disease requires another to be raised elsewhere to meet market demand – representing resources such as feed, water and land that are not subsequently converted into food.

Maximising the health and wellbeing of livestock ensures that all of the resources invested in them are maximised and associated emissions are minimised. A recent Oxford Analytica report commissioned by HealthforAnimals found that:³

- A 60% global vaccination rate for beef cattle improves productivity by more than 50% - while in upper middle-income countries, a 60% vaccination rate is associated with a 34.7% productivity increase (equivalent to the beef consumption needs of 3.1 billion people).
- A 40% vaccination rate in cattle is associated with significant reductions in land use required for livestock production (global average 5.2%).
- 8.6% more land is required to maintain production when 20% of the global poultry population is affected by disease.



The report found that improving animal health and husbandry practices could reduce emissions by 18 to 30 per cent. This would enable livestock producers to increase production to meet the needs of an additional 1.9 billion people without increasing current emissions.

Australia has a varied, unique and often challenging environment – and Australian farmers have always been adaptable and keen to embrace innovation to help them meet these challenges. In recent years, the increased severity of environmental conditions and frequency of natural disasters like drought, flood and fires bring with them an even greater need for innovative solutions. These changing environmental conditions will alter the distribution and behaviour of many animal and insect species, in turn leading to changing distributions of vector-borne diseases.

Emissions

The Australian Government has made a commitment to reduce emissions by 43 per cent and reach net zero emissions by 2050, which is supported by the National Farmers Federation (NFF). The Government's focus is on investing in various technologies aimed at reducing emissions in agriculture, as well as enabling farmers to demonstrate sustainable actions.

In 2022, Australia signed the global methane pledge (30 per cent reduction in methane emissions by 2030). Importantly, there has been no indication that the government will legislate or introduce taxes or levies to reduce livestock emissions.

All of Australia's major livestock production sectors have developed sector-specific sustainability frameworks, which feature aspirational targets relating to emissions reduction:

- The red meat industry has set a target to be carbon neutral by 2030⁴ and, as of 2019, has decreased annual emissions by 58 per cent.⁵
- Improved productivity led to a 9 per cent reduction in emission intensity between 2005 and 2020 in both the wool (26.9 to 24.4 kg CO₂e/kg greasy wool) and sheep meat (7.5 to 6.8 kg CO₂e/kg liveweight) sectors. The sheepmeat sector has subsequently achieved carbon neutrality while increasing production.



Globally, a reduction of 10 per centage points in disease levels is associated with an 800 million tonne decrease in emissions.

Evidence is emerging regarding the mitigating impacts of animal health products on emissions related to livestock production, as reported by HealthforAnimals:³

- Globally, a reduction of 10 per centage points in disease levels is associated with an 800 million tonne decrease in emissions.
- Disease mitigation resulted in a 5 to 16 per cent reduction in emissions per kilogram of energy-corrected milk (ECM) in dairy cattle (e.g. Bovine Viral Diarrhoea, mastitis, infertility)⁶
- Vaccination against endemic cattle disease (e.g. calf pneumonia, BVD, salmonella, Johne's, Infectious Bovine Rhinotracheitis) resulted in decreased emissions of 12 to 277 kt CO_{2-eq}⁷

Similar data in Australian production systems would provide a mechanism for animal industries to demonstrate their climate performance and emissions reduction achievements, as well as provide incentive for improvement through better animal health. Existing models used to generate emissions reduction outcomes associated with disease prevention or mitigation require validation in Australian production systems.

Biosecurity, zoonoses and disease preparedness

Climate change will pose diverse and growing threats to Australia's livestock – as well as public health. Most notably, changing environmental conditions will alter the distribution and behaviour of many animal and insect species, in turn leading to changing distributions of vector-borne diseases.



The best way to prevent zoonotic diseases spreading to humans is to prevent our animals from becoming ill.

The United Nations estimates that around 60 per cent of infectious diseases are zoonotic – that is, they are spread between animals and people.⁸ In Australia, improved animal health management means that the risk of diseases being spread directly from animals to humans is low – but indirect transmission (e.g. via insects or food) does occasionally occur.

The best way to prevent zoonotic diseases spreading to humans is to prevent our animals from becoming ill.

Healthy animals, and food products derived from healthy animals, are less likely to carry pathogenic organisms that pose risks to human health – but as our environment changes, so do the pests and disease vectors that live among us.⁹

Flies, ticks, mosquitoes and rodents are common disease vectors that can quickly spread into new areas in favourable environmental conditions where they have not been previously detected or routinely looked for, and where the animal and human population may be immunologically naïve.

Environmental stressors can result in altered disease transmission routes (e.g. if the preferential target species for a mosquito is not found in the new environment, it may feed on a new species) as well as increased infectivity and pathogen virulence.

Vaccination, parasite control medications and other disease prevention tools, along with rigorous biosecurity processes and diagnostic technologies are increasingly being used to keep animals healthy – putting veterinarians and vets at the forefront of zoonoses prevention and public health.



Looking ahead

Improving animal health is the foundation for more sustainable food systems. Australian farmers and veterinarians are already charting the course towards greater sustainability but need more support.

Developing policies, partnerships and technologies that improve animal health will contribute to improved sustainability outcomes for Australia's livestock sectors. Increasing the availability of veterinary services and supporting farmers to adopt best practices can allow livestock producers to meet the nutritional needs of a growing population while reducing our environmental footprint.

Supporting innovation in the animal health sector to ensure veterinarians and farmers have access to the most appropriate and effective animal health products will enable many of the challenges associated with achieving a more sustainable future to be met.



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