Submission No 72

FOOD PRODUCTION AND SUPPLY IN NSW

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Committee on Environment and Planning
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Submission to *Inquiry into Food Production and Supply in NSW*

I welcome the opportunity to provide a response to the above review. I write with the hope my submission assists the committee in recommending actions to address issues with food production and supply in NSW.

Introduction

Governments at all levels can no longer ignore the emergency that we now face and will leave as a legacy for future generations. Climate change, biodiversity loss and other environmental emergencies are increasingly threatening reliable and equitable access to food for all of Australia's people ***as well as*** the world's populations.

In this submission I will demonstrate how the animal agriculture industry contributes to many of threats covered by this inquiry, including food insecurity, climate change, resource waste, land degradation, water overuse, the decline in the health of ocean ecosystems and an accelerating biodiversity emergency.

I propose a transition ***away*** from the production of animal products and ***into*** plant-based agriculture as well as the re-wilding of freed up land.

My submission will also show how meat, dairy and eggs are not necessary for a healthy diet and if the ***real*** cost of these foods were passed onto the consumer, . I urge the government to move towards healthy plant-based diets as well as assist the development of new plant-based industries through reallocation of subsidies – such as the MERiL program [1](a whopping ***$155 million*** dollars), the Emergency Water Infrastructure Rebate[2], the Zinc Phosphide Rebate[3] (now closed), the Natural Disaster Transport Subsidy[4], the Donated Fodder[5] program and many other subsidy programs that prop up the animal agriculture industry.

[1] MERiL program
[2] the Emergency Water Infrastructure Rebate
[3] Zinc Phosphide Rebate
[4] Natural Disaster Transport Subsidy
[5] Donated Fodder

1.Improving food security and equitable access to food.

Response:

Food security is broadly defined by the Food and Agriculture Organisation of the United Nations as:

> *".....when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."*

In a paper[6] written in September 2020 both the Australian Institute of Family Studies (AFIS) and Child Family Community Australia (CFCA) identifies the following key messages around food security in Australia:

Figure 1: Key messages from the CFCA paper

- In Australia, food security is not measured at a population level regularly or consistently. However, estimates suggest that between 4% and 13% of the general population are food insecure; and 22% to 32% of the Indigenous population, depending on location.
- Some Australians may be more vulnerable to food insecurity, including: low-income earners, people who are socially or geographically isolated, Aboriginal and Torres Strait Islander peoples, culturally and linguistically diverse groups, single-parent households, older people and people experiencing homelessness.
- For children, food insecurity can have negative short- and long-term effects academically, socially, emotionally, physically and developmentally.
- The primary reason for food insecurity is material hardship and inadequate financial resources. People can also experience food insecurity due to: difficulty accessing affordable healthy food (e.g. financially or geographically), or limited food and nutrition literacy (e.g. knowing how to purchase and prepare ingredients to make a healthy meal).
- The strategies required to address food insecurity for all Australians are many and varied. These include policy interventions; local level collaborations; emergency food relief initiatives; school-based programs and education.
- Child, family and community welfare organisations have a role to play in identifying families that may be experiencing food insecurity and linking them with available supports.

The paper concludes:

Figure 2: Conclusions from the CFCA paper

[6] CFCA paper

Conclusion

While it is difficult to capture the full extent of food insecurity in Australia with the figures that are available, some populations are more likely to be food insecure than others. Attending to the personal or household contributors of food insecurity, while important, does not address the origins of the issue. This is because food insecurity rarely happens in isolation but rather in co-occurrence with economic, health and housing insecurity and other hardships (Herault & Ribar, 2016). As such, public policy and community level solutions are required to address food insecurity for all Australians. For child and family welfare service practitioners, strategies responding to food insecurity typically focus on: building food and nutrition literacy through education; alleviating hunger through emerging food relief; and/or partnering to deliver local solutions. Child and family welfare practitioners and services can support food insecure households through sound screening and identification processes, and referrals to appropriate supports.

With this in mind, the response to this aspect of the inquiry is multifaceted and complex, with no single solution able to be provided by one government department or community organisation. It demonstrates the need for a coordinated response from many groups with specific and local solutions.

However, one of the key components of this paper is the need for sustainable and reliable food availability which is significantly affected by land use and climate change.

While there are several drivers of the decline in the environment, research shows that the animal agriculture industry is a key contributor to environmental damage in many areas such as land clearing, topsoil degradation, nutrient depletion, chemical pollution, habitat destruction, biodiversity loss, species extinction, over breeding, inter breeding, unnatural species creation, invasive species, to name only a few.

The damage of animal agriculture is always overlooked in institutional and government inquiries, and my submission proposes to highlight these issues, demonstrate how animal agriculture ***increases food insecurity*** and offer solutions on how the issues can be addressed.

The havoc caused to the world environment by the billions of animals that humans breed, raise and kill for food each year is staggering. The United Nations has identified animal agriculture as *'one of the most significant contributors to today's most serious environmental problems'*[7], including climate change, species extinction, loss of fresh water, rainforest destruction, spreading deserts, air and water pollution, acid rain, soil erosion and loss of habitat. Vast areas of forest are cleared to grow crops to feed to farmed animals. The methane produced by these animals is the largest single cause of global warming, larger than all transport worldwide. Large quantities of excrement produced by animal industries leak into rivers and oceans as pollution.

Environmental damage caused by animal agriculture can be reduced as animal products can easily be replaced by plant products with a significantly lower environmental footprint. Instead of growing crops to feed animals to feed to humans, it is much more efficient and causes less harm to the environment to consume the plants directly.

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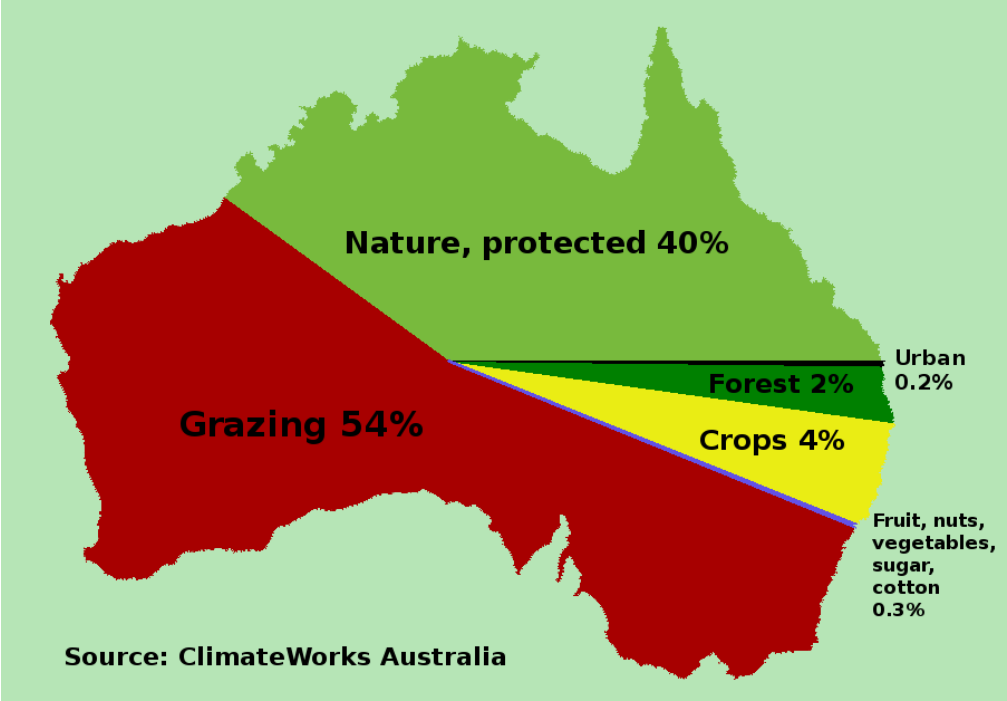
[7] *'one of the most significant contributors to today's most serious environmental problems*

We would feed five times as many people, unlock significant amounts of fresh water, help reverse global warming, use less fossil fuels and allow large areas of land to be rewilded.

In Australia 54% of the Australian continent is used for animal farming. Most of this land used for grazing, along with some land used for growing food for farmed animals. In other words, over half of the Australian landmass is used to produce animals as food, as shown in the large red area of Figure 3:

Figure 3: Land use in Australia for Food Production



In contrast, only 4% is used to grow crop plant foods, of which about a quarter is used to grow grains and fodder for feeding farmed animals. Fruits, vegetables and nuts use only 0.1%, cotton 0.1% and sugar 0.1%.

With a huge amount of land dedicated to raising animals for food, a much smaller part growing crops like wheat and barley, and a tiny amount growing all the fruit and vegetables it can be demonstrated that growing plants for food is an incredibly efficient use of land.

When we dedicate the majority of our land to a food source such as animal agriculture that is net negative, as animals are inefficient converters of food, we are using our resources in a very short-term way to the detriment of future generations.

It is irresponsible for us as a society to continue to use land in inefficient ways. Our future depends on us making changes now. All stakeholders - governments (federal, state & local), land holders, businesses and the community contribute either in positive or negative ways to how land is used, and the end result is food security or food insecurity.

The organisation Vegan Australia recommends a transition away from animal products and a change to a plant-based eating for Australians. Nutritional science shows that humans have no need for farmed animal food products. In fact, there is a solid body of peer-reviewed scientific evidence to confirm that it actually benefits human health to consume a primarily plant-based diet. Changing to a plant-based diet can help people live a longer, healthier life, and significantly reduce risk of falling victim to many of the serious health threats facing Australians today.

Australia's peak health body, the National Health and Medical Research Council, recognises that a vegan diet is a viable option for all Australians. Australia's top health experts agree with those in other parts of the world that well-planned vegan diets are safe and healthy for all age groups. The Australian Dietary Guidelines state that alternatives to animal foods, such as nuts, seeds, legumes, beans and tofu, can "increase dietary variety and provide a valuable and affordable source of protein and other nutrients found in meats."

According to the US Academy of Nutrition and Dietetics, "Appropriately planned ... vegan diets are healthful, nutritionally adequate, and may provide health benefits for the prevention and treatment of certain diseases. These diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood and for athletes."

The Victorian Government's Better Health Channel states that vegan diets "can provide many health benefits, such as a reduced risk of chronic diseases, including obesity, coronary artery disease, hypertension (high blood pressure), diabetes and some types of cancer". It also states that vegans "have lower rates of illness and death from a number of degenerative diseases" and that vegan diets "are appropriate for all stages of a person's life".

The Final Report of the Independent Expert Panel on Interim Emissions Reduction Targets for Victoria notes that "literature is also emerging to indicate that reduced consumption of meat and of other animal products (which are generally emissions-intensive) can produce health benefits." and acknowledges that "reduced consumption of animal products would provide further health benefits."

Not only are animal products unnecessary for optimal health, an increasing number of nutritionists and health professionals are acknowledging animal products are harmful to our health. This is supported by decades of good research. A healthy vegan diet helps reduce the risk of heart disease, stroke, cancer, obesity, and diabetes, some of Australia's top killers.

A recent issue of the Medical Journal of Australia, dedicated to the question "Is a Vegetarian [including vegan] Diet Adequate?", included the following statements. "A varied and balanced plant-based diet can provide all of the nutrients needed for good health." "Most vegans meet the recommended daily intake for protein." "Vegan diets generally contain just as much or more iron than mixed diets containing meat." "BMI and obesity was lowest for vegans."

The China Study by T Colin Campbell is one of the most comprehensive studies on nutrition ever done. Campbell provides compelling evidence linking animal products to disease, including cancer, heart disease, osteoporosis, diabetes, etc.

Australians themselves are realising the benefits of plant-based diets with research showing that 37% are now actively reducing their meat consumption. The research found that reducing their environmental footprint was the key driver, along with wishing to have a healthier lifestyle and to prevent lifestyle diseases.

3.Developing technologies to bring food production into cities resources.

Response:

Any reduction in the footprint of foods is a benefit to the climate emergency. During the COVID 19 pandemic many home owners commenced food gardening as a form of food security. Programs to further encourage small gardens at residential dwellings will reduce the footprint of many easy to grow foods.

Other programs to bring food production closer to the consumer are:

- Community gardens
- Permaculture education
- Vertical garden hubs

4.Preserving productive land and water resources.

Response:

Animal agriculture is the leading source of greenhouse gas emissions, which in turn detracts from the ability to preserve productive land. This fact makes land used for animal agriculture destructive instead of productive.

Those who care about our future are all concerned about climate change and the majority of people support the move to renewable energy, however many are unaware of the catastrophic effect meat, dairy and egg production is having on the climate emergency. In Australia, animal agriculture emits about 50% of all greenhouse gases, when accounted over 20 years. This is more than all other sources, including energy generation and transport. Animal agriculture produces greenhouse gases through land clearing for grazing, methane produced by cows and sheep, savanna burning for clearing and emissions from manure.

Animal agriculture is the largest source of methane making it a major driver of the climate emergency. When 20-year GPWs are used and short-term gases are included, we find that animal agriculture is responsible for about 50% of all greenhouse gases, both in Australia and worldwide. For the calculation that animal agriculture is the source of over 50% of Australia's greenhouse gases refer to Livestock and Climate Change[8], by Robert Goodland and Jeff Anhang, Worldwatch Institute.

Methane stays in the atmosphere on average about 12 years with reductions in methane emissions will cause more immediate cuts to global warming than reductions in carbon dioxide emissions. Carbon dioxide can stay in the atmosphere for over 100 years, so even if carbon dioxide emissions (from, for example, burning fossil fuels) were reduced now, it would take many decades for this to have an effect on global warming.

[8] Livestock and Climate Change

Once we understand that animal agriculture is a major source of greenhouse gas emissions, a simple, effective and relatively quick solution becomes clear. By ending the use of animals for food, we not only act ethically for the animals, but also help slow and eventually reverse global warming.

The economic impact of removing animals from the agricultural system will not be as significant as most people believe. The animal agriculture industry is a relatively small part of the modern Australian economy. It currently contributes about 1.2% to the Australian GDP and employs less than 1.5% of the Australian workforce.

If animals were no longer part of the agricultural system, there would be significant positive impacts not just on the climate, but also on other aspects of the environment. Woodlands and forests could be revegetated, marine environments and wildlife habitats could be restored, biodiversity increased, species extinctions reduced, and water use, soil loss and pollution all reduced.

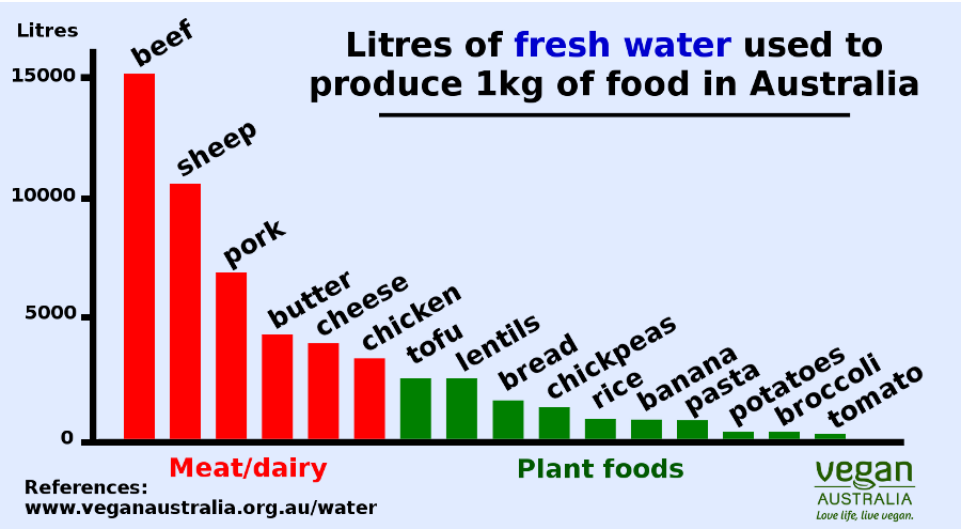
Alongside these benefits, any negative economic impacts could be carefully managed to avoid dislocation, by reskilling workers and reusing land for other purposes. Currently, over half of the Australian continent is used for animal agriculture. When we transition this land to be used for sequestering carbon, we would remove carbon dioxide from the atmosphere and start to reverse global warming.

Studies carried out by researchers in Australia and overseas show that over 20 times more fresh water is required to produce animal products compared to the same weight of plant products. Animal agriculture puts a huge strain on our water resources and compromises our water security.

While directly saving water at home is a noble idea, most people don't realise that water used to produce our food makes up 90% of all water used by an average Australian household. Thus, whether saving water for drinking, or saving our mighty rivers and their wetlands, moving to a plant-based diet will have a much more positive impact than having shorter showers or planting drought proof plants in the garden.

As the graph above shows for Australia, producing 1kg of beef, lamb, pork and other animal products takes many more litres of water than 1kg of plant-based foods, like grains, beans, fruit and vegetables.

Figure 4: Fresh water use in food production



Some facts about animal agriculture and water use:

- It takes over 20 times more water to produce 1kg of beef compared to rice, grains, beans, fruit and vegetables in Australia.
- It takes 800 litres of water to produce one litre of cow's milk, four times as much as it takes to make one litre of soy milk.
- Agriculture is the number-one user of water, accounting for 65% of total water consumed in Australia and 70% worldwide.
- Animal agriculture is responsible for up to one third of all freshwater consumption in the world today.
- 43% of irrigation water in Australia is used by the animal agriculture industry.
- Only 24% of irrigation water in Australia is used for fruit, vegetables and grains for human consumption.
- The dairy industry uses 19% of irrigated water in Australia and is responsible for 35 per cent of water consumption in the Murray-Darling basin, Australia's most important agricultural region.
- The world will run out of fresh water by 2050 if we continue to consume animal products at the current rate, according to the Stockholm International Water Institute.

More information and references: https://www.veganaustralia.org.au/water

6. Limiting the impact food production has on the environment, including overfishing.

Response:

Animal agriculture is the key driver for habitat clearing and destruction in Australia. In NSW, the most common land use is grazing animals on modified or irrigated pastures, making up over 50% of the state. Additional land is used for growing feed for these animals as well as intensively grown animals. As the Beyond Zero Emissions Land Use Report[9]says "Since colonisation Australia has seen more biodiversity loss than any other continent and this rate is still one of the highest globally. Deforestation and grazing pressure are the major threats to biodiversity, and cause stress to a range of ecological communities across the continent."

Native vegetation is still being cleared for agriculture in parts of Australia and although it continues in NSW to some extent, much of the state has already been cleared.

The UN Global Assessment Report on Biodiversity and Ecosystem Services[10]identifies the animal agriculture industry as "one of the most significant contributors to today's most serious environmental problems" including the risk of extinction of one million species worldwide. The report was released by IPBES, a UN organisation with over 100 member countries, and also found that:

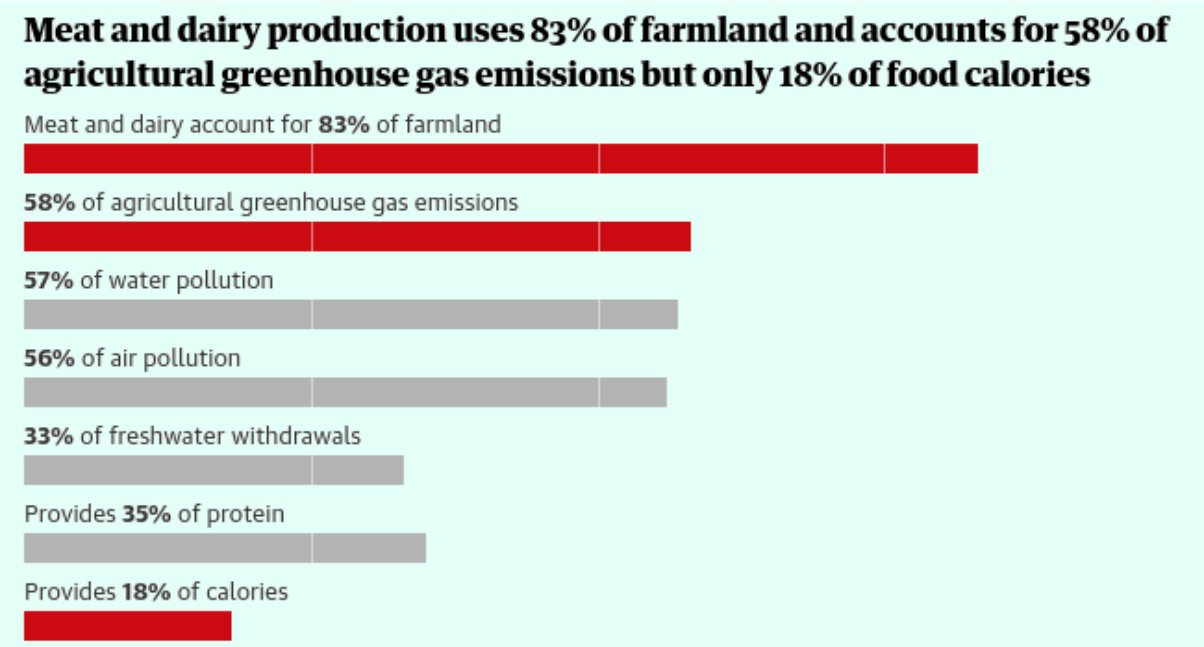
- Livestock production (grazing and feedstock) is the single largest driver of habitat loss.
- Grazing areas for cattle account for about 25% of the world's ice-free land.
- Animal agriculture contributes at least 18% to global greenhouse gas emissions.
- Industrial fishing takes place in more than half the world's oceans.
- Livestock production uses a large portion of freshwater resources.
- One third of the world's crops are used as feed for livestock production.

[9] https://bze.org.au/research_release/land-use/
[10] https://ipbes.net/global-assessment

- Animal-based foods, especially beef, require more water and energy than plant-based foods. This means more greenhouse-gas emissions.
- The meat and dairy industries use 83% of farmland but contribute only 18% of food calories.
- Farmed animals now account for over 90% of all large land animals.
- Producing protein via farmed animals is a very wasteful use of resources. It can take from 10kg to 100kg of plant foods to produce just 1kg of animal product.
- The demand for grain-fed meat is one of the main drivers of global biodiversity loss.

Note that the 18% figure for greenhouse gas emissions from animal agriculture is determined using a 100 year GWP time frame to compare methane and carbon dioxide. Using a 20 year time frame (much more relevant to the current climate emergency), the figure is about 50%. That is, about half of the world's greenhouse gas emissions are due to the animal agriculture industry.

As well as agriculture, the report also lists climate change, pollution and invasive species as damaging to nature, but these have had a relatively low impact compared to the surge in agriculture (mainly animal agriculture) and fishing which are the primary causes of the deterioration.



To help reverse some of this damage to the environment, the report recommends that meat consumption be reduced by changes in diet. It suggests that reducing meat consumption in higher-income countries would yield the largest potential gain for the environmental and health benefits.

It suggests "improvements in consumption patterns can likely be achieved by reducing subsidies for animal-based products, increasing those for plant-based foods, and replacing ecologically-inefficient ruminants (e.g., cattle, goats, sheep). Research and development of plant-based meat substitutes is also a growing phenomena and potential solution." It also suggests that meat prices are kept artificially low, which can increase consumption.

The report notes that reduced demand for animal products can achieve multiple goals, such as greenhouse gas emission reduction, food security and biodiversity protection.

While the report does not call for a plant-based diet, it does suggest that the less meat, dairy and egg in a diet, the better for the environment and for health. Some scenarios mentioned in the report call

for 50% less meat consumption. Regarding the environment, the best future scenario beneficial for biodiversity envisioned by the report includes "a shift in diet towards less meat." It also states that "significant reduction in consumption of meat and eggs means that less agricultural production would be required, thus reducing associated biodiversity loss." Regarding health, the report notes that "diet related disease is the leading cause of premature mortality." and "increased consumption of fruits and vegetables is associated with reductions in various diseases such as cardiovascular disease."

For decades, hundreds of exotic plant species have been introduced in Australia as feed for animal agriculture and have now become invasive weeds which threaten the environment, cause habitat loss and threaten biodiversity.

One such species is Gamba grass which was originally introduced to Australia as a pasture species for cattle. It is now a significant invasive week in several parts of Australia and increases the frequency and intensity of wildfires and competes with native grasses. See the ABC News article 'Indigenous rangers dismayed as NT Government allows cattle station to graze gamba grass weed'.

By ending animal agriculture, we will not only free up land needed for biodiversity and end the suffering of over half a billion farmed animals every year, but also begin to reverse the damaging impact of invasive pasture grasses.

8. Consideration of workforce challenges and skills development.

Response:

The economic impact of removing animals from the agricultural system will not be as significant as many people imagine. The animal agriculture industry is a relatively small part of the modern Australian economy. It currently contributes about 1.2% to the Australian GDP and employs less than 1.5% of the Australian workforce. For NSW, animal agriculture contributes about 1.7% to economic output and employs about 1.4% of the workforce. Compared to industries like manufacturing (6%) and construction (9.5%), the animal agriculture industry is smaller than almost every other industry in NSW.
Any negative economic impacts of phasing out animal agriculture can be carefully managed to avoid dislocation, by reskilling workers and reusing land for other purposes, such as carbon farming, biochar production and revegetation as described above. Developing the plant-based alternative industry in NSW will increase and diversify in employment opportunities.

By removing animals from agriculture, a large proportion of land currently cleared for animal agriculture will be freed up. This will allow regrowth and reforestation which will have many environmental benefits, including strengthening ecosystems, increasing biodiversity and allowing endangered species to recover and possibly preventing extinctions in the future.

Actively revegetating cleared land or allowing it to regenerate naturally will protect soils and prevent erosion, thus producing cleaner water.

Other ways to use the land that will become available when animals are removed from agriculture include:

- growing extra plant foods, particularly on land previously used for feed production and dairying
- carbon farming (sequestering carbon dioxide) by regrowing vegetation and increasing the carbon stored in the soil

- returning land to Aboriginal ownership and control
- biochar production from tree crops

Carbon farming would enable the land use sector to become a sink for emissions from other sectors, such as power generation and transport.

Only a few possibilities are covered here as this is a large and complex task, with many options and which will require further research. The skilled and knowledgeable rural workforce will be a crucial asset in making this change.

With animal agriculture a key threat to food security in NSW (and Australia), the following solutions can make up ways to reverse the trend and support the state (and country) into more secure food options.

Phasing out animal agriculture will allow damaged ecosystems to be restored and biodiversity to improve. The elimination of greenhouse gas emissions from animal agriculture, in conjunction with efforts to substantially reduce fossil fuel emissions, will give us the best chance of avoiding climate-system tipping points and averting the worst effects of climate change. Avoiding the inherent inefficiency of animal agriculture will reduce resource waste and encourage more productive and sustainable methods of producing food. Finally, a corresponding improvement in diet will lead to a lower risk of many chronic diseases.

A dignified transition to an animal-free agricultural system needs to be managed so that living standards are maintained and there is enough healthy food for everyone. Any negative economic or employment impacts should be minimised and any costs should be borne by the community as a whole. The broader society has an obligation to share the responsibility for this shift to prevent the burden of the economic costs falling solely on rural communities.

A 10 year phase-out period will allow time for adjustments in employment and investment. Stakeholders would consult with experts and workers to plan a controlled phase out of animal agriculture, carefully managing it to allow the environment to recover while also protecting jobs and the economy.

Changes to land use, such as regrowth and reforestation, will continue far into the future. It is important that these changes be protected. Again the responsibility to manage these risks lies with society both now and in the future and not just with individual landholders.

As with any significant change in the economy, the transition will have real impacts on some individuals, families, communities and businesses. It will be important for the government to build on existing best practice to support impacted communities and ensure a just transition.

An immediate removal of all subsidies currently given to animal agriculture, and the redirection of these funds to plant farming will support the transition. In particular, support via a transitional assistance program should be given to farmers to who wish to switch from animal agriculture to other uses of the land, including plant farming, reforesting, habitat protection and carbon farming.

A cessation of land clearing would maintain habitat for threatened plants and animals, support biodiversity, reduce erosion and prevent greenhouse gas emissions.

Tree planting schemes to be encouraged as part of the development of negative emissions technologies. This should include large-scale afforestation and reforestation projects managed by the NSW Government.

Revegetation of land will act as a significant carbon sink, as well as improving biodiversity and other markers of environmental health. Some work has been done in this area already, and that that work has the potential to be expanded drastically. Efforts to sequester carbon by protecting, restoring or regenerating vegetation should be encouraged and supported through access to carbon offsets or government procurement.

Helping endangered ecosystems in this way may have notable social benefits as well. Researchers at ANU have found that landholders who are engaged in environmental programs suffer fewer problems with mental illness.

In order to ensure that the public, and lawmakers, are properly informed about the true impacts of agriculture (and other industries) the 20-year GWP figures should be included alongside the 100-year GWP figures along with an explanation of how they differ. This is known as "dual term greenhouse gas reporting". This two-value approach, which indicates the effect over two different time horizons, is suggested by a number of studies. Providing the 100-year figures alone, without any explanation of the underlying assumptions used to arrive at this figure, ignores the potentially disastrous effects of climate-system tipping points, and constitutes a failure to properly inform the readers of these documents. To increase transparency, the NSW Government and other organisations adopt dual term greenhouse reporting in their publications.

The Victorian Government's Independent Expert Panel report on Interim Emissions Reduction Targets for Victoria lists one of the main drivers of greenhouse gas emissions as "rising food demand with beef cattle being the biggest contributor of agriculture emissions, followed by sheep and pigs."

The government needs to act on this evidence to drive down demand. A concerted effort should be made to educate the public about plant-based nutrition and encourage the adoption of healthy plant-based diets. This effort should take a whole of government approach and include community groups such as Vegan Australia. The public should be educated about how consuming animal products can increase the risk of many serious chronic diseases, how to eat healthily on a plant-based diet and the health benefits of a balanced plant-based diet. The NSW Government should also educate the public about the impacts on the environmental (biodiversity loss, land degradation, climate change, etc) of animal agriculture and the ethical aspects of animal use.

Summary

This inquiry into the food system in NSW is an opportunity for the community to reflect on the damaging impact of animal agriculture on many aspects of food security, in particular the damage to the environment and its contribution to biodiversity loss. The extent of the damage is huge, with over half a billion farmed animals bred, raised and killed for food in Australia every year. The animal agriculture industry occupies over half of the Australian landmass, causes the majority of land clearing and emits a significant portion of greenhouse gases.

By acknowledging the impact of animal agriculture on the environment, this inquiry allows us to consider alternative ways we can obtain food and fibre which do not involve both the suffering of farmed animals and the environmental havoc animal agriculture causes.

The key recommendation of this submission is that the government should begin a managed phase out of animal agriculture to increase food security and restore damaged ecosystems. Acting quickly and in a controlled way will allow the environment to recover while also protecting jobs and the economy.

Thank you for the opportunity to respond to the inquiry.

Paula Gilbard