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## **Submission on Reducing Victoria's Greenhouse Gas Emissions**

Vegan Australia welcomes the opportunity to make this submission to the Victorian Government on its climate change policies. Vegan Australia commends the Victorian Government's commitment to delivering strong and lasting action on climate change for the community. Effective action in the next few years is crucial to avoid runaway global warming. We hope this submission assists the government in setting Victoria's priorities for addressing climate change.

Vegan Australia is a national organisation that informs the public about animal rights and veganism and also presents a strong voice for veganism to government, institutions, corporations and the media. Vegan Australia envisions a world where all animals live free from human use and ownership. The foundation of Vegan Australia is justice and compassion, for animals as well as for people and the planet. The first step each of us should take to put this compassion into action is to become vegan and to encourage others to do the same. Veganism is a rejection of the exploitation involved in commodifying and using sentient beings.

Climate change is one of the greatest challenges of our times, with the potential to devastate human societies and economies, as well as animal populations across the globe. Vegan Australia supports strong action on climate change, and we believe that this action must come from multiple sectors. The climate impact of fossil fuels is undeniable, and we must curtail their use if we want to avert catastrophic climate change, but another major source of emissions is often ignored. Animal agriculture is one of the most significant drivers of climate change, both within Victoria as well as Australia and globally, yet little has been done to address this.

While the Final Report of the Independent Expert Panel on Interim Emissions Reduction Targets for Victoria (2021-2030) suggests emissions reduction projects in the land and agriculture sectors, most of this is directed towards vegetation projects (which Vegan Australia supports), and not from directly reducing emissions from the primary source of emissions in this sector: animal agriculture. Where such reductions are made, they are small increases in production efficiency with some, such as methane inhibitors and a 'methane vaccine' using unproven technologies, offering only "up to 30%" reductions and possibly very costly. The report states that "given the majority of Victoria's agriculture emissions are methane emissions from livestock, targeting this source is likely to have the greatest impact in reducing emissions in the sector." While it mentions some opportunities to reduce these emissions, it fails to mention the obvious and most effective way of reducing emissions in this sector: reducing or eliminating livestock, the source of the emissions.

In this submission, Vegan Australia will argue that the emissions figures provided in the Final Report for Agriculture and Land use, land use change and forestry are misleading and overly conservative, and that animal agriculture is a significant driver of climate change. We will recommend that Victoria phase out animal agriculture over the coming 10-year period, in conjunction with substantial reductions in the use of fossil fuels.

The proposal to phase out animal agriculture over the next 10 years is consistent with our previous submissions to inquiries into animal welfare (both generally[1,2,3], and specific to dairy cows[4], chickens in the egg industry[5], fish[6] and pest animals[7]), the environment, human health and chronic diseases[8].

## **The environmental impact of agriculture**

The Independent Expert Panel Report states that the agriculture sector accounted for 13.9 Mt CO<sub>2</sub>-e, or 12 per cent of Victoria's annual emissions in 2016. This figure relies on assumptions that are unstated in the report. To arrive at this figure methane and other greenhouse gases are converted to CO<sub>2</sub>-e using a 100-year Global Warming Potential (GWP)[11]. For example (using Department of the Environment and Energy figures), over 100 years, methane is approximately 25 times as potent as CO<sub>2</sub>, so is assigned a 100-year GWP of 25[11]. Using a 100-year GWP of methane of 25 is relying on outdated scientific information. The fifth IPCC report, for example, uses a 100-year GWP of methane of 28 without climate-carbon feedbacks, and 34 with these feedbacks [Note 1][12].

This 100-year timeframe, however, is arbitrary. The IPCC states that "There is no scientific argument for selecting 100 years compared with other choices (Fuglestvedt et al., 2003; Shine, 2009). The choice of time horizon is a value judgement because it depends on the relative weight assigned to effects at different times." [12] The 20-year GWP of methane as given in the fifth IPCC report is 86 (with feedbacks)[12], but according to Shindell et al., this figure rises to 105 once indirect radiative effects of aerosols are taken into account[13]. Howarth et al., argue that the 20-year timeframe is relevant because "the decadal scale is critical, given the urgent need to avoid climate-system tipping points [Note 2]" [14]. If we measure the impact of sectors using a 20-year timeframe, instead of the 100-year timeframe, the climate impact of agriculture (the largest emitter of methane[15]) is significantly higher. Failing to acknowledge this in the Independent Expert Panel Report gives the false impression that the importance of the climate impacts of agriculture are much lower than they actually are.

Figure 6.1 of the Independent Expert Panel Report uses a 100-year GWP. It would look very different if a 20-year GWP were used and would indicate the true impact of animal agriculture on climate change.

While the figures provided include the impact of changing land use patterns, they fail to include the ongoing climate impact of land previously cleared for agriculture. Revegetating this land would allow for substantial carbon sequestration which is forgone when using this land for agriculture, as forests are approximately 10 times more effective at carbon sequestration than perennial grasslands[16], with pasture created from previously forested areas likely to be even less effective at carbon sequestration. While land clearing of agriculture has reduced significantly in recent decades, the ongoing impact of land previously cleared, coupled with reduced but still significant ongoing land clearing, must be accounted for when discussing agriculture emissions.

Taking into account these and other factors, the Beyond Zero Emissions Land Use discussion paper states that "Warming from Australian agricultural emissions over the next 20 years will be greater than warming from all fossil fuel emissions." [17] In a subsequent study that "re-calculates emissions to include short lived gases and uses 20 year Global Warming Potentials (GWPs)", Wedderburn-Bisshop et al. estimate that "Australia's annual emissions more than double when compared to the national inventory, with agriculture producing 54% of the national total." [18] Whilst reducing or eliminating our dependence on fossil fuels is vital to averting the worst effects of climate change in the long term, simultaneously reducing emissions from agriculture is vital to tackling Australia's contribution to climate change in both the short and long term.

## **Animal agriculture**

While the previous section referred to agriculture as a whole, animal agriculture is responsible for a hugely disproportionate share of agriculture's total emissions. Using the conservative assumptions used by the Department of the Environment and Energy, approximately 58 Mt [10], or 83% of the 70 Mt CO<sub>2</sub>-e attributable to agriculture (Australia wide) is directly attributable to animal agriculture. As a substantial majority of the methane emissions from agriculture are attributable to enteric fermentation and manure management, this figure raises significantly, both as an absolute figure and as a proportion, when using a 20-year GWP timeframe.

The Victorian Government's Better Health Channel (26) states that "Livestock production accounts for nearly 80 per cent of greenhouse gas emissions from agriculture worldwide. It also places a much heavier burden on water, land and fossil fuel resources than grains and other crops." The Independent Expert Panel Report states that "about two-thirds of Victoria's agriculture emissions come from livestock (methane produced from fermentation during digestion) predominantly from cows." Another main source is manure.

It is important to note that, of the remaining emissions not directly attributable to animal agriculture, a substantial proportion is indirectly attributable to animal agriculture. The Stock Feeds Manufacturers' Council of Australia estimates that 13 million tonnes of stock feed was fed to animals in 2015/16 [20], which accounts for a significant proportion of total crops grown in Australia. The Beyond Zero Emissions Land Use Report states that "Two-thirds of crop production for domestic markets and all fodder production are consumed as animal feed." [17] While it is difficult to accurately estimate the climate impact of livestock feed grown in Australia, it certainly forms a substantial proportion of agriculture emissions not directly attributed to animal agriculture.

A similar pattern emerges upon inspection of Land Use, Land Use Change, and Forestry (LULUCF) emissions. The majority of emissions from LULUCF comes from deforestation, the majority being for animal agriculture [21]. In Queensland, the state with the highest rate of land clearing, for the 2014-2015 period, 91% of cleared woody vegetation was replaced with pasture [22]. A small additional source is management of existing grazing land. The majority of the carbon sinks in the LULUCF sector are from reforestation and forest management, which are areas that are not contributed to by the animal agriculture sector [21]. While reliable nationwide figures are difficult to come by, in part

due to the prevalence of illegal land clearing[23], it is clear that the vast majority of emissions from the LULUCF sector are attributable to animal agriculture.

Taking these factors into account, the Beyond Zero Emissions Land Use discussion paper estimates that "Rangeland grazing, with associated deforestation, enteric fermentation and savanna burning, produces 49% of national emissions when accounted over 20 years." [17]

Phasing out animal agriculture in 10 years would support the need to start reducing emissions as quickly as possible as suggested by the IPCC special report, and also help remove carbon dioxide from the atmosphere. This would, as the the Independent Expert Panel Report states, "support increased emissions sequestration through reforestation and forest management, where appropriate, alongside other policy priorities such as biodiversity protection, water, food production and regional jobs and economic development."

### **Environmental benefits of a vegan agricultural system**

A report by the CSIRO (27) states that "Land clearing, primarily for agriculture, is perhaps the single most important cause of environmental degradation, loss of species, and depletion of ecological communities."

The U.N. has identified animal agriculture as 'one of the most significant contributors to today's most serious environmental problems', including global warming, species extinction, loss of fresh water, forest destruction, air and water pollution, acid rain, salinity, soil erosion and loss of habitat. Vast areas of forest are cleared to grow crops to feed farmed animals.

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

As stated in the Independent Expert Panel Report, Meat & Livestock Australia has a target of net zero emissions by 2030. Also, the case study on Jigsaw Farms looks at efforts by the farm owners to reduce greenhouse gas emissions. What Jigsaw Farms has done is reforest some of the land previously cleared for grazing animals. The animal agriculture side of the business is still a net producer of greenhouse gasses. A more effective solution would be to plant trees and also *\*not\** grow animals. This would allow even more land to be reforested. Offsetting emissions by planting trees does not make the industry "net zero emissions".

The report states that on Jigsaw Farms "about one million trees have been planted on an area equivalent to 20% of the farm's total area." These trees will be useful for sequestering carbon for the period they are growing, but eventually the forest will become stable in terms of greenhouse gas emissions. But the animals grazing on the other 80% of the farm will still be a source of emissions.

While the use of animals on Jigsaw Farms has a negative impact on the environment, the case study shows that reducing the area used by animal farming has benefits in terms

of biodiversity, climate change, forestry and the local environment, such as reducing wind chill and reducing salinity. Removing animals entirely would increase these benefits markedly. The report states that the farm runs a "high-input livestock" operation. While it is not explicit about this, this may mean that the farmed animals on their land have a high input of feed and fodder. Again, if animals were removed from the farm, the land used to grow the feed and fodder could be used for foods for humans.

As well as helping reverse greenhouse gasses, reforestation and afforestation measures in Victoria would deliver other benefits to the environment. As the Independent Expert Panel Report states, it can "support biodiversity and strengthen ecosystems which provide services including nutrient cycling, water and air purification, and habitat for wildlife. Tree planting can also remediate areas affected by dryland salinity by lowering the water table."

## **Evidence that animal products are not necessary for health**

Vegan Australia's recommendation to phase out animal agriculture implies a change to a plant-based diet for Victorians. 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 Victorians today.

The Independent Expert Panel Report 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."

The Victorian Government's Better Health Channel (26) 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".

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."

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.

By encouraging a transition to a plant-based diet, the Victorian Government will not only be responding to the climate emergency, but also aligning these actions with the State's other goals, such as health, industry development and job creation, as recommended in the Independent Expert Panel Report.

## **Recommendations**

The challenge of climate change must be met quickly and effectively in order to avert the potential catastrophic effects at both the national and global level. In order to help achieve this, Vegan Australia makes the following recommendations to be included as part of Victoria's climate change policies. Included are both recommendations for improving the Victorian Government's publications in order to better inform the public and lawmakers, and tangible action that can be taken to substantially reduce Victoria's greenhouse gas emissions.

**Include 20-year GWP figures in future publications:** 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" (24). This two-value approach, which indicates the effect over two different time horizons, is suggested by a number of studies (25). 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, Vegan Australia also recommends that the Victorian Government urge other organisations and governments, nationally and internationally, to adopt dual term greenhouse reporting in their publications.

**Include the sources of land clearing in future publications:** The vast majority of land clearing in Australia is for pastoral use, however this is rarely explicitly discussed in relevant publications. Explicitly providing relevant data on the causes of land clearing in Australia would allow policy makers and community organisations to make better informed decisions about ways to deal with this land clearing.

**Phase out animal agriculture over 10 years:** Vegan Australia has consistently called

for the phasing out of animal agriculture over 10 years to allow a transition period for people working and investing in the industry. Eliminating emissions from animal agriculture over this 10 year period, in conjunction with efforts to substantially reduce fossil fuel emissions, while encouraging the international community to do the same, will give us the best chance of avoiding climate-system tipping points and averting the worst effects of climate change. It is the position of Vegan Australia that the broader society has an obligation to share the responsibility for this shift, so the burden of the economic costs does not fall solely on rural communities.

**Ensure a just transition:** The transition, both to an animal-free agricultural system and a low-emissions society, 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 must be borne by the community as a whole and not left to landholders and workers to bear.

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.

This recommendation is reflected in the Independent Expert Panel Report: "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 individuals and ensure a just transition."

Vegan Australia supports submissions by other organisations such as the Clean Energy Council, Environment Victoria and the Victorian Trades Hall Council that measures should be taken to ensure a just transition for communities and industries likely to be directly negatively impacted by emissions reduction policies. This would include retraining workers and creating alternative employment opportunities for those currently employed in emissions-intensive activities.

**Remove subsidies from animal agriculture and give assistance to plant farming:** In order to meet this 10 year timeframe, Vegan Australia recommends the removal of all subsidies currently given to animal agriculture, and the redirection of these funds to plant farming. In particular, transitional assistance should be given to those wishing to switch from animal agriculture to plant farming.

**Educate people about healthy vegan diets:** The Independent Expert Panel Report lists one of the main drivers of emissions as "rising food demand with beef cattle being the biggest contributor of agriculture emissions, followed by sheep and pigs." The evidence is there: the government needs to act on this to drive down demand. A concerted effort should be made to educate the public about, and encourage the adoption of, vegan diets. This effort should take a whole of government approach and include community groups such as Vegan Australia. The Victorian Government should focus on educating the public on the climate impact of diets containing animal products, as well as the impacts on water use, biodiversity loss, and land degradation.

**Cease land clearing:** A cessation of land clearing would substantially reduce greenhouse gas emissions.

**Incentivise tree planting:** as suggested by the Independent Expert Panel Report its support for the development of negative emissions technologies. This should include large-scale afforestation and reforestation projects managed by the Victorian Government.

**Revegetate land currently used for animal agriculture:** The revegetation of land would act as a significant carbon sink, as well as improving biodiversity and other markers of environmental health. Vegan Australia notes that some work has been done in this area already, and that that work has the potential to be expanded drastically. See Reference 28. Vegan Australia also supports Victoria's traditional owners in efforts to "sequester carbon by protecting, restoring or regenerating indigenous vegetation", as mentioned in the Independent Expert Panel Report. These activities could be supported through access to carbon offsets or government procurement.

## Summary

In summary, we recommend that more relevant methods be used to measure the impact of greenhouse gases on climate change, animal agriculture be recognised as a significant driver of climate change and animal agriculture be phased out over a 10 year period, in conjunction with substantial reductions in the use of fossil fuels.

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## Notes

- (1) When a greenhouse gas enters the atmosphere, it causes warming. This warming causes a number of climatic events to happen (such as increases in water vapor, a powerful greenhouse gas, in the atmosphere, and decreases in the area of ice sheets), which, in turn, further increase the amount of warming. Accounting only for the warming that occurs without these feedbacks significantly underestimates the amount of warming that actually occurs.
- (2) Climate-system tipping points are thresholds which, if passed, "push components of the Earth system past critical states into qualitatively different modes of operation". Examples include melting ice sheets, changing weather patterns, rain forest diebacks, and melting permafrost. Should these tipping points be reached, irreversible natural feedback cycles would render catastrophic climate change inevitable[19].

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