



Vegan Australia
Level 3, 50 York Street, Sydney 2000
Email: info@veganaustralia.org.au
Phone: 0400 492 157
Web: veganaustralia.org.au

5 May 2017

Submission to 2017 review of climate change policies

Vegan Australia welcomes the opportunity to make this submission to the Department of the Environment and Energy's Review of Australia's climate change policies. We hope this submission assists the department in setting national priorities for addressing climate change.

Vegan Australia is a national organisation that informs the public about animal rights and veganism and presents a strong voice for veganism to government, institutions, corporations and the media. Vegan Australia envisions a world in which 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 Australia and globally, yet little has been done, by successive governments, to address this.

While the Discussion Paper touts emissions reduction projects in the land and agriculture sectors, most of the tangible benefits have come from 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 (as discussed in the case study), while the discussion paper fails to mention the most effective way of reducing emissions in this sector: phasing out the raising of animals for food.

In this submission, Vegan Australia will argue that the emissions figures provided in the Discussion Paper 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 Australia should 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 discussion paper states that "Agriculture and land use, land use change and forestry ('the land sector'), accounted for 66 Mt CO₂-e, or 12 per cent of Australia's annual emissions in 2015." [9] This figure, while consistent with the Department of the Environment and Energy's Australia's emissions projections, groups together a number of separate factors into "The Land Sector" emissions, and, in doing so, provides a misleading interpretation of reality. By separating out agriculture we can begin to see important features that may be missed when looking at the total figures.

The 66 Mt CO₂-e figure takes the total emissions figure of 70 Mt CO₂-e [10], and subtracts the 4 Mt [10] due to the (rare) net negative land use emissions [Note 1]. By including the effects of the carbon sinks of revegetation and forestry (which are not directly related to agriculture), greenhouse gas emissions from agriculture appear to be much lower than they actually are. With carbon sinks unrelated to agriculture removed from the calculation, the greenhouse gas emissions attributable to agriculture and associated land use can be revised upwards to approximately 110 Mt, or approximately 21 percent of the estimated 527 Mt CO₂-e emitted in 2015.

Even this 21 percent figure relies on outdated data and assumptions that are unstated in the discussion paper. These figures convert methane, and other greenhouse gases to CO₂-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 CO₂, 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 2] [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 3]" [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 discussion paper gives the false impression that the importance of the climate impacts of agriculture are much lower than they actually are.

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 use 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 CO₂-e attributable to agriculture 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.

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]

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 Australia's climate change policies. Included are both recommendations for improving the Department of the Environment and Energy's publications in order to better inform the public and lawmakers, and tangible action that can be taken to substantially reduce Australia'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. 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. Vegan Australia also recommends that the Department of the Environment and Energy urge other organisations and government departments, internationally, to adopt a 20-year GWP 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 Department of the Environment and Energy 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 reduce the impacts of this land clearing.

Separate carbon sinks from agriculture in future publications: While it is important to include the climate impacts of land directly attributed to agriculture, including other land use in the same category as agriculture results in a significantly reduced estimate of emissions from this sector. Introducing climate sinks from land use as a separate sub sector would improve the accuracy and relevance of the information presented.

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 over the same period, 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.

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: A concerted effort should be made to educate the public about, and encourage the adoption of, vegan diets. This effort should be interdepartmental, and include community groups including Vegan Australia. The Department of the Environment and Energy 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 nation-wide cessation of land clearing would substantially reduce Australia's greenhouse gas emissions.

Revegetate existing pastoral land: 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.

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.

Tim Westcott
Vegan Australia

Notes

- (1) Every year previous to 2015 has had net positive LULUCF emissions. Net positive LULUCF emissions are projected in the period to 2030[10].
- (2) 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.
- (3) 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].

References

1. Westcott, T., McFarlane, G., 2016. Submission to the Productivity Commission public inquiry into the regulation of Australian agriculture. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/3392/attachments/original/1469850467/Regulation-of-Agriculture.pdf?1469850467>
2. Westcott, T., McFarlane, G., 2016. Submission to the Productivity Commission on the draft report of the inquiry into regulation of agriculture. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/3500/attachments/original/1471356149/Regulation-of-Agriculture-Draft-Report.pdf?1471356149>
3. McFarlane, G., 2016. Submission on Victoria's Animal Welfare Action Plan. Retrieved from: https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/3967/attachments/original/1476168106/Victoria_Animal_Welfare_Action_Plan_Submission.pdf?1476168106
4. Westcott, T., 2016. Submission to the ACCC inquiry into the dairy industry. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/4454/attachments/original/1481520291/ACCC-Dairy-Inquiry.pdf?1481520291>
5. Westcott, T., 2016. Submission on the Free Range Egg Labelling Information Standard. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/4396/attachments/original/1481082119/Free-Range-Egg-Labelling-Submission.pdf?1481082119>
6. Westcott, T., McFarlane, G., 2016. Submission to the Productivity Commission public inquiry into the regulation of Marine Fisheries and Aquaculture. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/3554/attachments/original/1471870450/Vegan-Australia-Fisheries.pdf?1471870450>
7. Westcott, T., 2016. Submission on draft Australian Pest Animal Strategy. Retrieved from: <https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/4028/attachments/original/1476785470/Australian-Pest-Animal-Strategy-Submission2.pdf?1476785470>
8. Daly, J., McFarlane, G., 2011. National Food Plan Issues Paper: A response from Vegan Society NSW and Vegan Australia, September 2011. Retrieved from: https://d3n8a8pro7vhm.cloudfront.net/veganaustralia/pages/793/attachments/original/1438940702/National_Food_Plan.pdf?1438940702
9. The review of climate change policies Discussion Paper, Commonwealth of Australia 2017. Retrieved from: <http://www.environment.gov.au/system/files/consultations/dcb346e1-f0c0-4ba4-aa83-047c062b4bbc/files/discussion-paper-review-of-climate-change-policies-2017.pdf>
10. Australia's emissions projections 2016, Commonwealth of Australia 2016. Retrieved from: <http://www.environment.gov.au/system/files/resources/9437fe27-64f4-4d16-b3f1-4e03c2f7b0d7/files/aust-emissions-projections-2016.pdf>
11. National greenhouse accounts factors, Commonwealth of Australia 2016. Retrieved from: <http://www.environment.gov.au/system/files/resources/e30b1895-4870-4a1f-9b32-3a590de3dddf/files/national-greenhouse-accounts-factors-august-2016.pdf>
12. Myhre, G., D. Shindell, F.-M. Breon, W. Collins, J. Fuglestedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T.

- Takemura and H. Zhang, 2013: Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Retrieved from: http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf
13. Shindell, D.T., Faluvegi, G., Koch, D.M., Schmidt, G.A., Unger, N. and Bauer, S.E., 2009. Improved attribution of climate forcing to emissions. *Science*, 326(5953), pp.716-718. Retrieved from: <http://science.sciencemag.org/content/326/5953/716>
 14. Howarth, R.W., Santoro, R. and Ingraffea, A., 2012. Venting and leaking of methane from shale gas development: response to Cathles et al. *Climatic Change*, 113(2), pp.537-549. Retrieved from: <http://link.springer.com/article/10.1007/s10584-012-0401-0>
 15. Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2016, Commonwealth of Australia 2016 Retrieved from: <http://www.environment.gov.au/system/files/resources/48275b92-3f4b-44d0-aa4e-50ece408df86/files/nggi-quarterly-update-jun-2016.pdf>
 16. Which plants store more carbon in Australia: forests or grasses?, Australia's chief scientist 2009. Retrieved from: <http://www.chiefscientist.gov.au/2009/12/which-plants-store-more-carbon-in-australia-forests-or-grasses/>
 17. Zero Carbon Australia Land Use: Agriculture and Forestry Discussion Paper, Beyond Zero Emissions 2014. Retrieved from: <http://media.bze.org.au/lur/BZE%20Zero%20Carbon%20Australia%20Land%20Use%20report.pdf>
 18. Wedderburn-Bisshop, G., Longmire, A. and Rickards, L., 2015. Neglected Transformational Responses: Implications of Excluding Short Lived Emissions and Near Term Projections in Greenhouse Gas Accounting. *International Journal of Climate Change: Impacts & Responses*, 7(3). Retrieved from: <http://ijc.cgpublisher.com/product/pub.185/prod.269>
 19. Lenton, T.M., Held, H., Kriegler, E., Hall, J.W., Lucht, W., Rahmstorf, S. and Schellnhuber, H.J., 2008. Tipping elements in the Earth's climate system. *Proceedings of the national Academy of Sciences*, 105(6), pp.1786-1793. Retrieved from: <http://www.pnas.org/content/105/6/1786.full>
 20. Facts & Figures, Stock Feed Manufacturers Council of Australia 2016. Retrieved from: http://www.sfmca.com.au/info_centre/facts_and_figures/
 21. Australian Land Use, Land Use Change and Forestry Emissions Projections to 2030, Commonwealth of Australia 2013. Retrieved from: <http://www.environment.gov.au/system/files/resources/82177797-135b-4a95-a463-28aae5f7c9aa/files/australian-lulucf-emissions-projections-2030.pdf>
 22. Queensland Department of Science, Information Technology and Innovation. 2016. Land cover change in Queensland 2014-15: a Statewide Landcover and Trees Study (SLATS) report. DSITI, Brisbane. Retrieved from: <https://publications.qld.gov.au/dataset/98622954-d0d9-49c0-b3f5-044af7858ca2/resource/c8cbe1af-67fd-49e0-b40f-6246868b4c45/download/executive-summary-slats-report-2014-15.pdf>
 23. Brewster, K., 2015. Battle for the bush: NSW Government accused of failure to act on alleged illegal land clearing. Retrieved from: <http://www.abc.net.au/news/2016-11-14/battle-for-the-bush/7903010>