

Unlocking the potential of plant-based diets

ProVeg International welcomes the opportunity to contribute to the Talanoa Dialogue in order to offer constructive and supportive input. Climate change is a massive threat to food security, water availability, and biodiversity worldwide, as well as a major cause of environmental disasters. The production and consumption of animal products is a major driver of climate change, whereas shifts towards plant-based eating help to reduce greenhouse gas emissions. ProVeg aims to raise awareness of the connection between our diets and climate change.

1. Background

The role of animal agriculture in climate change

Meat, dairy, and egg production are among the leading causes of human-caused climate change. According to the Food and Agricultural Organization of the United Nations (FAO), farmed animals are responsible for 14.5% of total anthropogenic greenhouse gas emissions.¹ Animal agriculture accounts for at least half of all food-related greenhouse gas emissions.^{2,3} In total, the global food system accounts for approximately 30% of all human-made emissions.^{4,5} The immense scale of beef and dairy production means that cattle farming contributes the biggest share of the meat industry's total greenhouse gas emissions, at 65%.⁶ Worldwide, the top five meat and dairy corporations emit more greenhouse gas emissions than Exxon, Shell or BP.⁷ Both direct emissions and indirect emissions are of paramount importance in terms of implementing the goals set in the Paris Agreement. As well as being a huge source of emissions, animal agriculture further exacerbates climate change as vast areas of forests, grasslands, and wetlands are cleared to provide land for grazing and feed crops. Forests and other wildlands mitigate climate change by acting as massive carbon sinks, in which carbon is absorbed from the atmosphere and sequestered underground.

Emission levels are continuing to rise due to ever-intensifying meat and dairy production. If the consumption of meat and other animal products increases at current rates, greenhouse gas emissions from animal agriculture will rise by nearly 80% by 2050, consuming a large part of the global emissions budget.^{8,9,10} As a result, achieving the climate targets set in the Paris Agreement

¹ Gerber, P. et al. (2013): Tackling climate change through livestock: a global assessment of emissions and mitigation opportunities. FAO, Rome.

² Vermeulen, S. J. et al. (2012): Climate Change and Food Systems. Annual Review of Environment and Resources 37, p.195–222.

³ Herrero, M., B. Henderson, P. Havlík, et al. (2016): *Greenhouse gas mitigation potentials in the livestock sector*. Nature Clim. Change. 6, p.452–461.

⁴ Vermeulen, S. J. et al. (2012): Climate Change and Food Systems. Annual Review of Environment and Resources 37, p.195–222.

⁵ Bajželj, B., J. M. Allwood & J. M. Cullen (2013): *Designing Climate Change Mitigation Plans That Add Up*. Environ Sci Technol. 47, p.8062–8069.

⁶ Gerber, P. et al. (2013): Tackling climate change through livestock: a global assessment of emissions and mitigation opportunities. FAO, Rome. p. 15.

⁷ Heinrich Böll Stiftung, GRAIN & Institute for Agriculture & Trade Policy (2017): Big Meat and Dairy's supersized Climate Footprint.

⁸ Popp, A. et al. (2010): Food consumption, diet shifts and associated non-CO2 greenhouse gases from agricultural production. Global Environmental Change 20, p.451–462.

⁹ Tilman, D. & M. Clark (2014): Global diets link environmental sustainability and human health. Nature 515, p.518–522.

will be unrealistic. Thus, reducing the production and consumption of animal products is a crucial step towards the 2 °C and 1.5 °C targets.^{11 12}

Unlocking the potential

The aforementioned facts indicate that the predominant diet in industrialised countries critically hampers the implementation of the Paris Agreement. Therefore, shifts in diets are a crucial step in the right direction. There is consistent evidence that plant-based diets are less damaging to the climate than diets which rely heavily on animal products. Consider, for example, that producing 1 kg of beef releases between 16 and 30 kg of carbon dioxide (equivalent) into the atmosphere,^{13 14} while producing 1 kg of tofu releases only 1 kg of carbon dioxide (equivalent).¹⁸ As an example, replacing beef with beans would free up 42% of US farmland, achieve 75% of the US's 2020 climate goal, and provide more than sufficient dietary protein.¹⁹ Studies suggest that personal food-related carbon footprints could be halved with the adoption of a plant-based diet,²⁰ while the worldwide adoption of a vegan diet could reduce food-related greenhouse gas emissions by up to 70% by 2050.²²

Given that meat, dairy, and other animal-based foods create more greenhouse gases and require significantly more land and other resources than plant-based foods, it should be concluded that shifts towards increasingly plant-based diets are a simple and effective measure to make a positive impact on climate change.

2. IPCC recognises healthy diets

ProVeg welcomes the inclusion of sustainable and healthy diets in the Special Report as part of cost-effective climate change mitigation measures. The Report acknowledges that shifts towards diets with a smaller share of animal-based calories present a crucial step in meeting the 1,5°Goal.

¹⁰ Springmann, M. et al. (2016): Analysis and valuation of the health and climate change co benefits of dietary change. PNAS 113, p.4146–4151.

¹¹ Brent Kim et al. (2015): The Importance of Reducing Animal Product Consumption and Wasted Food in Mitigating Catastrophic Climate Change. John Hopkins Center for a Livable Future.

¹² Hedenus, F., S. Wirsenius & D. J. A. Johansson (2014): The importance of reduced meat and dairy consumption for meeting stringent climate change targets. Climatic Change. 124, p.79–91.

¹³ Lesschen, J P., M. van der Berg et al. (2011): Greenhouse gas emission profiles of European livestock sectors. Animal Feed Science and Technology, pp. 166-167 and pp. 16-28.

¹⁴ Garnett, T. (2009): Livestock-related greenhouse gas emissions: Impacts and options for policy makers. Environmental Science and Policy 12, pp. 491–504.

¹⁵ Carlsson-Kanyama, A., & A. D. González (2009): Potential contributions of food consumption patterns to climate change. The American Journal of Clinical Nutrition 2009; 89 (suppl), pp. 1704S-9S.

¹⁶ Reinhardt, G., S. Gärtner, Münch, J. & S. Häfele (2009): Ökologische Optimierung regional erzeugter Lebensmittel: Energie- und Klimabilanzen, Heidelberg: IFEU.

¹⁷ Venkat, K. (2012): The climate change and economic impacts of food waste in the United States, Portland, OR: CleanMetrics Corp.

¹⁸ Mejia, A. et al. (2017): Greenhouse Gas Emissions Generated by Tofu Production: A Case Study. Journal of Hunger & Environmental Nutrition.

¹⁹ Harwatt, H. et al. (2017): Substituting beans for beef as a contribution toward US climate change targets. Climatic Change doi:10.1007/s10584-017-1969-1.

²⁰ Wissenschaftlicher Beirat für Agrarpolitik, Ernährung und gesundheitlichen Verbraucherschutz & Wissenschaftlicher Beirat Waldpolitik beim BMEL (2016): Klimaschutz in der Land- und Forstwirtschaft sowie den nachgelagerten Bereichen Ernährung und Holzverwendung.

²¹ Scarborough, P. et al. (2014): Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK. Climatic Change 125, p.179–192.

²² Ibid.

The transition towards plant-based diets could contribute one-fifth of the mitigation needed to hold warming below 2°C, according to the IPCC.

A reduction in animal-based food commodities would not only reduce the burden on our climate but would also free up valuable arable land that could be made available for crops grown for direct human consumption. Food justice and other substantial co-benefits, which also meet several Sustainable Development Goals, are recognised in the Special Report on 1,5°C. This would represent a crucial step towards global food security.

3. Projects for change

Start the discussion

ProVeg aims to raise awareness about the climate impact of our food choices. Furthermore, ProVeg encourages decision makers to introduce and prioritise food consumption and production, particularly animal agriculture, on both the global climate agenda and within national implementation plans. Dietary change should be encouraged through broad policy strategies, aiming at reducing the consumption of animal products in industrialised societies and limiting the increased consumption of animal products in developing societies. Policy strategies could – for example – include measures such as shifts in agricultural subsidies and taxation, changing the regulatory framework on innovative plant-based products, and more plant-based options in public canteens.

Reaching out to young people may well be the most sustainable way of changing current consumption behaviours. That is why ProVeg International has launched several projects addressing schools and canteens. With no technological obstacles to replication, these projects are good examples of effective solutions to mitigate climate change.

Plant-Powered Pupils Campaign for Nutrition Education in Schools

The earlier that healthy eating and behaviour patterns are learned, the greater the chance that they will be maintained and implemented in a sustainable way. This is why ProVeg Germany and the health insurance company BKK ProVita launched the Plant-Powered Pupils programme two-and-a-half years ago. The campaign educates and empowers children to make healthier food choices through interactive sessions on the importance of a sustainable and healthy diet and their ability as individuals to mitigate climate change through healthy food choices. To date, the campaign has reached 23,000 pupils in 38 schools throughout Germany.

School Plates

School Plates is ProVeg UK's programme of bringing about menu change within primary schools across the UK. Since launching in June 2018, a total of 110 primary schools in two local councils in England have launched new menus after collaborating with ProVeg UK. Menu changes include the introduction of Meat-Free Mondays, new meat-free daily meals, and new descriptions for the meat-free and plant-based dishes to make them even more appealing to the students.

Based on commitments from the schools and local councils currently engaging with School Plates, around 3.1 million meat-based meals are set to become meat-free over the next 12-month period.

Caterer training with ProVeg Food Services

Another key element of ProVeg activities to achieve a broad shift in diets is caterer training.

For trainee chefs and catering staff, gaining knowledge on healthy, sustainable, and cost-effective meals helps to establish them as first movers and gives them advantages in the job market. An increased demand for fruits, vegetables, nuts, and beans by school kitchens and catering firms is also a boost to farmers and rural economies. As such, these items can now be found in the regular menu.

ProVeg supported the planning and implementation of the 'Hin & Veg' action week by the catering company Sodexo, which took place at 600 schools- with great success.

4. Conclusion

ProVeg International would like to stress the crucial importance of discussions on the climate impact of the agricultural sector in general and on meat and dairy production, in particular, within the realm of international climate policy negotiations, and encourages world leaders to address the topic at COP24. Ultimately, updated and more ambitious nationally determined contributions (NDCs) should strengthen action in the field of agriculture and sustainable food consumption.