



MEAT AND CLIMATE ON YOUR PLATE

For most of us, the food on our plates feels unrelated to climate change. But scientific research points to an important connection.

The Climate and our Food

Greenhouse gases (GHG) are gases that act as a thermal blanket for the earth, keeping the surface of the Earth warm enough for humans to survive. Some greenhouse gases are carbon dioxide, methane and nitrous oxide. Alongside these gases, water vapor also contributes to warming. Over the last century, the amount of greenhouse gases in the atmosphere has increased greatly, much of it caused by human activities, primarily burning of fossil fuels (coal, hydrocarbon gas liquids, natural gas, and petroleum) for energy use.

Most climate scientists agree the main cause of the current global warming trend is human activities that have caused increased levels of GHG in the atmosphere—with more gases, more heat is trapped on Earth, and the result is a warming, “greenhouse effect.”^{i, ii} Global GHG emissions come from different sectors, including electricity, transportation, industry and agriculture.ⁱⁱⁱ

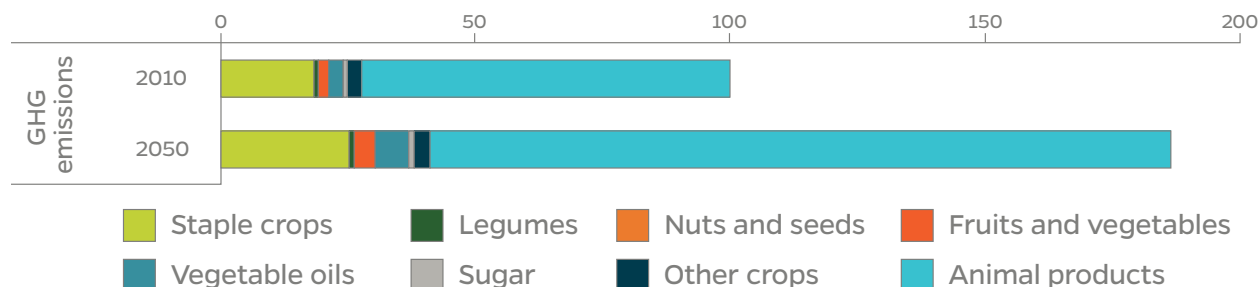
Although the agriculture sector is often overlooked, it is responsible for a significant amount of greenhouse gases. In 2010 the food

system overall emitted an estimated 5.2 billion tons of carbon dioxide (CO₂) equivalents (one way of measuring combined GHGs), and three-fourths of these emissions were from the production of animal products.^{iv} Livestock production in particular contributes an estimated 14.5 percent of all global greenhouse gas emissions from human activities, which is slightly more than the entire transportation sector.^v These gases include methane from animals, nitrous oxide from fertilizers and animal manure, and carbon dioxide from deforestation. Ruminant animals, including cattle, produce methane as part of their digestion, and this process alone represents almost one third of the emissions from the agriculture sector.

The Solutions

Researchers estimate that between 2010 and 2050, in the absence of technological changes and mitigation measures, the environmental impact of the food system could increase by 50 to 92 percent due to a growing population and changing diets.^{vi} On the other hand, there is increasing consensus in the scientific community that shifting Western diets toward more plant-based, less processed diets will result in positive outcomes on health and the environment.^{vii} And among food systems

Environmental pressure (percentage of present impact)^{vi}



solutions, diet changes have the most significant potential impact in terms of reducing greenhouse gases.

Reductions in meat consumption in particular can have a profound effect. A systematic review of potential changes in GHG emissions, land use and water use from shifting current dietary patterns confirmed the greatest positive impacts of dietary shifts will come from eating less meat from ruminant animals, eating less dairy and meat from other sources, and eating more-plant based foods.^{viii} Another study calculated the impact of following global dietary guidelines for red meat, sugar, fruits, vegetables and total energy intake and predicted a decrease in GHG emissions by 29 percent compared with 2050 “business as usual” projections.^x Further replacing most animal products with less GHG-intensive food types (greater amounts of vegetables, fruit, nuts and legumes) in a flexitarian diet would represent a 52 percent decrease in GHG from what is projected with “business as usual” scenarios. Addressing food waste and technology solutions would reduce GHG emissions further.^x

Climate change adversely affects food production, distribution, and quality, and it also affects health. Warmer and less predictable weather will increase heat-related illnesses, illnesses from poor air quality, undernutrition from lower nutrient value of crops and food insecurity, and vector-borne diseases (depending on the geographical location).^{xi}

Meatless Monday and Climate

Reducing the amount of meat we consume globally is necessary, but shifting toward more climate-friendly diets will require multiple, targeted approaches. Even as meat consumption is rapidly increasing globally, in less developed regions, food-insecure families experience higher rates of undernutrition that can be improved with adequate meat and dairy consumption.^{xii} However, across much of the developed world, including North America,

Europe and many parts of Asia, evidence is strong and growing that a shift toward a more sustainable, less meat-heavy diet is needed for a healthy planet.^{xiii}

Meatless Monday is a perfect first step toward a climate-friendly diet. Making changes to our diets is no easy thing. However, research shows that people who make smaller, more gradual changes are more successful in achieving their goals.^{xiv} Additionally, the use of frequent reminders or prompts appears to help people stick to new health behaviors and achieve better outcomes.^{xv} Meatless Monday offers an actionable, weekly opportunity to lower the GHG impact of diets with a simple message, “One day a week, cut the meat.”

Substituting meat with plant-based foods one day a week could reduce one person’s diet-related GHG footprint by nearly 5 percent, based on the typical US diet. If 30 percent of the US population practiced Meatless Monday, the overall decrease in diet-related GHG emissions for the United States alone would be about 1.5 percent, which is equal to the impact of the estimated number of current vegans and vegetarians.^{xvi} Globally, eliminating meat for one day per week could reduce diet-related GHG emissions by an estimated 1.0 to 1.3 Gigaton (Gt) per year relative to predicted scenarios based on current consumption patterns.^{xvii} Reducing emissions by 1.3 Gt would be equivalent to taking 273 million cars off the road, based on the typical passenger vehicle in the United States, which is equivalent to the number of cars in the US in 2017!^{xviii, xix} Surveys of people who have participated in MM indicate that in addition to cutting out meat one day a week, they make other changes in their diets as well, including adding more vegetables, choosing meatless meals more often, and purchasing less meat overall.

For more information on Meatless Monday and to connect with people around the world mitigating climate change one Monday at a time, go to www.meatlessMonday.com.

Meat and Climate on Your Plate: References

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