

Food

Climate change impact and actions

Overview of topic

Global food production is the single largest human pressure on earth¹ and food production and its associated land conversion is responsible for nearly 25% of global greenhouse gas emissions.² And about one third of food produced is never consumed.³ Addressing climate change through responsible food choices centers on eating a planet-friendly diet, reducing food waste and paying attention to food sources.

A planet-friendly diet is one that relies heavily on fruits and vegetables with plenty of whole grains, plant proteins (e.g. beans, lentils, pulses, nuts), unsaturated plant oils, and modest amounts of meat and dairy.

Reducing food waste also powerfully helps address climate change. Food that is produced and not consumed

means the land, energy and water used in the production of the food are wasted and the associated carbon emissions were needlessly created. Foods that are not consumed and which end up in landfill also produce methane, a potent greenhouse gas contributing to global warming.

Locally sourcing food reduces the energy used in transportation and, in some cases, also reduces refrigeration needs, both of which contribute to lower emissions.

Making positive changes around our food habits and consumption is an impactful way to tangibly reduce our carbon footprint, protect animals and habitats, and improve health, while supporting local farmers.⁴

Did you know?

1.3 billion tons of food is wasted each year.

This is more than **three times** the amount needed to feed the roughly **800 million people** who are malnourished.⁵

In developing countries, **40%** of food losses occur at post-harvest and processing levels

while in industrialized countries, **more than 40%** of losses happen at retail and consumer levels.⁶

- Food waste is responsible for 6-8% of global greenhouse gas emissions.⁷
- Beef production emits twenty times more greenhouse gas emissions and requires twenty times more land per unit of edible protein than common plant-based protein sources such as beans, peas, and lentils.⁸
- Chicken and pork emit three times more greenhouse gas emissions and require three times more land than common plant-based proteins.⁹
- Up to 12% of global carbon dioxide emissions comes from deforestation.¹⁰
- Land conversion for food production is the single largest cause of biodiversity loss.¹² Between 1970 and 2020, the populations of mammals, birds, amphibians, reptiles, and fish declined by 68%.¹²

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Positive climate actions you can take



Today

Minimize food waste—make a meal plan, check your refrigerator and use a grocery list when shopping for food. Buy thoughtfully items you most frequently throw out due to spoilage.

Where available, choose frozen options—they can be just as nutritious, and stay edible for much longer.

Push the limits of your ingredients—peel and freeze bananas for baking or smoothies. Use leftovers in soups and stews.



Next month

Set goals to balance your meat consumption—small commitments to eat balanced amounts of more sustainable meat, and more fruit and vegetables, add up.

Keep track of wasted food and understand where it may have come from, e.g. too much food on your plate or scraps from food preparation.

Buy in-season and locally-sourced food to maximize freshness and reduce emissions from transporting your food.

Eat in more. Restaurant meals tend to have larger environmental impacts than meals prepared at home.



Over the coming year

Invest in a compost bin or look for a local service if you cannot compost at home.

Look for local food rescue organizations and consider how you could support their efforts to reduce food waste.

If you have the space, plant a vegetable garden or fruit trees.

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Additional Resources

Read

- [WWF | The future 50 foods](#) (report)
- [WWF | Food for thought](#) (report)
- [WWF | Planet-based diets](#) (site)
- [WWF | Eating for our planet](#) (site)
- [WWF | Bending the Curve: The Restorative Power of Planet-Based Diets](#) (report)
- [World Resources Institute | 6 Pressing Questions About Beef and Climate Change, Answered](#) (blog)
- [World Resources Institute | Sustainable Diets: What You Need to Know in 12 Charts](#) (blog)
- [EAT | Lancet Commission Summary](#) (report)
- [EAT | The science-based global platform for food system transformation](#) (site)
- [Cool Food | A Delicious Way to Help the Climate](#) (site)
- [WBCSD | Food & Nature](#) (site)
- [Meatless Monday](#) (site)
- [UN FOA | Crop production and climate change](#) (site)
- [Our World in Data | Environmental impacts of food production](#) (site)

Watch

- [WWF | Balancing the Needs of a Growing Population with a Finite Planet](#) (panel discussion)
- [WWF | The Wildlife and Food Connection](#) (video)
- [Climate Lab | The diet that helps fight climate change](#) (video)
- [Wasted! The Story Of Food Waste](#) (movie)
- [Jimi Sol | Carbon: The Ecosystems View](#) (video)
- [Carbon Brief | Can beef farmers reduce their carbon footprint?](#) (video)
- [TED-Ed | Aquaculture and climate change](#) (video)
- [Vaclav Smil | How much meat should we be eating?](#) (video)

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¹ Eat Forum, “[2019: A Super Year in Science for Food Systems Transformation](#)”, accessed December 17, 2020.

² IPCC, 2019: Summary for Policymakers. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

³ WWF, “[Fight climate change by preventing food waste](#)”, accessed December 17, 2020.

⁴ NSPI, Sustainability at home, Deloitte, 2020, p.11.

⁵ Food and Agriculture Organization of the United Nations, SAVE FOOD: Global Initiative on Food Loss and Waste Reduction. Food and Agriculture Organization of the United Nations, “[Food wastage footprint & Climate Change](#)”, p. 1.

⁶ Food and Agriculture Organization of the United Nations, “[Food wastage footprint & Climate Change](#)”, p. 1.

⁷ Food and Agriculture Organization of the United Nations, “[Food wastage footprint & Climate Change](#)”, p. 1.

⁸ Janet Ranganathan and Richard Waite, “[Sustainable Diets: What You Need to Know in 12 Charts](#)”, World Resources Institute, April 20, 2016.

⁹ Janet Ranganathan and Richard Waite, “[Sustainable Diets: What You Need to Know in 12 Charts](#)”, World Resources Institute, April 20, 2016.

IPCC, Special Report: Special Report on Climate Change and Land (2020, <https://www.ipcc.ch/srcccl/chapter/summary-for-policymakers>).

¹⁰ IPCC, 2019: Summary for Policymakers. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press. Sean L. Maxwell, Richard A. Fuller, Thomas M. Brooks & James E. M. Watson, “[Biodiversity: The ravages of guns, nets and bulldozers](#)”, Nature, August 10, 2016.

¹¹ Sean L. Maxwell, Richard A. Fuller, Thomas M. Brooks & James E. M. Watson, “[Biodiversity: The ravages of guns, nets and bulldozers](#)”, Nature, August 10, 2016.

¹² WWF.

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