

Sustainable Management of Food is an approach that seeks to reduce wasted food and its associated impacts over the entire life cycle, starting with the use of natural resources, manufacturing, sales, consumption, and ending with decisions on recovery or final disposal.

EPA works to promote innovation and highlight the value and efficient management of food as a resource. Through the sustainable management of food, we can conserve resources for future generations, reduce greenhouse gas emissions, help businesses and consumers save money, and provide access to food for those who do not have enough to eat. To build a circular economy for all, EPA seeks to highlight opportunities to use raw materials more efficiently, enable those resources to be used for their highest value, and recover valuable resources from discarded materials in ways that protect human health and help spur new innovation and economic growth.

The term “wasted food” describes food that was not used for its intended purpose and is managed in a variety of ways described below. EPA uses the overarching term “wasted food” instead of “food waste” for food that was not used for its intended purpose because it conveys that a valuable resource is being wasted, whereas “food waste” implies that the food no longer has value and needs to be managed as waste.

Wasted food is an overarching term to describe food that was not used for its intended purpose and is managed in a variety of ways, such as donation to feed people, creation of animal feed, composting, anaerobic digestion, or disposal in landfills or combustion facilities. Examples include unsold food from retail stores; plate waste, uneaten prepared food, or kitchen trimmings from restaurants, cafeterias, and households; or byproducts from food and beverage processing facilities. The term wasted food can be used to refer to both excess food and food waste.

Excess food (or surplus food) often refers to food that is donated to feed people.

Food waste often refers to food not ultimately consumed by humans that is discarded or recycled, such as plate waste (i.e., food that has been served but not eaten), spoiled food, or peels and rinds considered inedible. For purposes of Sustainable Development Goal Target 12.3, food waste occurs at the retail, food service, and residential levels and is managed by landfill; controlled combustion; sewer; litter, discards and refuse; co/anaerobic digestion; compost/aerobic digestion; and land application.

Food loss often refers to unused product from the agricultural sector, such as unharvested crops. For purposes of Sustainable Development Goal Target 12.3, food loss occurs from production up to (and not including) the retail level.

EPA encourages anyone managing wasted food to reference the Wasted Food Scale, which prioritizes actions that can be taken to prevent and divert wasted food from disposal. The most preferred pathways prevent wasted food, donate and upcycle food offer the most benefits to the environment, to communities, and to a circular economy.

Wasted food is both a growing problem and an untapped opportunity. In 2019 alone, EPA estimates that about 66 million tons of wasted food were generated in the food retail, food service, and residential sectors, and most of this waste (about 60%) was sent to landfills. EPA estimated that in 2018 in the U.S., more food reached landfills and combustion facilities than

any other single material in our everyday trash (24 percent of the amount landfilled and 22 percent of the amount combusted with energy recovery). Additionally, the U.S. Department of Agriculture estimates that in 2010, 31 percent or 133 billion pounds of the 430 billion pounds of food available at the retail and consumer levels was not eaten, valued at almost \$162 billion. Globally, the United Nations estimates that approximately one third of all food produced for human consumption is lost or wasted 13 percent of food is lost before reaching retail, and 19 percent is wasted from retail to consumer. At the same time, food loss and waste generates 810 percent of global greenhouse gas emissions. Each year, the emissions caused by wasted food in the U.S. are greater than the emissions from all domestic flights within the U.S. plus all international flights run by U.S. airlines.

When food is wasted, so is the opportunity to nourish people. When food is wasted, so are all the resources that went into producing, processing, distributing, and preparing that food.

Taking simple steps in your everyday life can make a difference in addressing this issue. Reducing wasted food is a triple win; it's good for the environment, for communities, and for the economy.

Saves Resources When food is wasted, it also wastes the resources such as the land, water, energy, and labor that go into growing, storing, processing, distributing, and preparing that food. Each year, food loss and waste take up an area of agricultural land the size of California and New York combined. This is enough energy to power 50 million U.S. homes for a year, and generate emissions (excluding landfill emissions) equal to the annual carbon dioxide emissions of 42 coal fired power plants.

Reduces Greenhouse Gas Emissions The majority of greenhouse gas emissions from wasted food results from activities prior to disposal, including production, transport, processing, and distribution. Once food goes uneaten, it must be managed through one of various pathways, such as donation, upcycling, composting, anaerobic digestion, or landfilling all of which also produce greenhouse gas emissions. To reduce these emissions, we need to prevent food from being wasted in the first place and sustainably manage what wasted food cannot be prevented.

Reduces Methane from Landfills When wasted food goes to a landfill, the nutrients in the food never return to the soil. The wasted food rots and produces methane, a greenhouse gas 28 times as powerful as CO₂ at trapping heat in the atmosphere. EPA estimates that wasted food is responsible for 58% of landfill methane emissions to the atmosphere.⁶ Check out these resources from USDA and EPA:

Returns Nutrients to the Soil

Even when we take all actions to use wasted food, certain inedible parts remain and can be turned into compost to feed and nourish the soil. Composting these wastes creates a product that can be used to help improve soils, grow the next generation of crops, and improve water quality.

Supports a Circular Economy Preventing food from being wasted, using food for its highest value which is to nourish humans, and recovering valuable nutrients from wasted food are all

activities that support a circular economy by reducing stress on natural resources, empowering communities, growing local economies, and spurring innovation.

In 2021, the EPA released the first of two reports in a series on the environmental impacts of wasted food to inform domestic policymakers, researchers, and the public about the environmental benefits that can be achieved by reducing U.S. food loss and waste. The Part 1 report, *From Farm to Kitchen: The Environmental Impacts of U.S. Food Waste*, examines the environmental impacts of wasted food from production to consumption. EPA released Part 2, *From Field to Bin: The Environmental Impacts of U.S. Food Waste Management Pathways*, in 2023, which completes the analysis by examining the different ways wasted food is managed. The results of this research are the basis for EPA's Wasted Food Scale.

Feed Children The U.S. Department of Agriculture estimates that five million children lived in food insecure households in 2021. By redirecting food that would otherwise be wasted to homes and schools, we can help feed our country's children.

Build Cleaner Communities Reducing waste and improving waste management can help create cleaner communities. Equitable access to food and processing wasted food into soil amendments can improve soil health, generate renewable energy, and keep economic and job benefits of organics recycling in those communities.

Create Job Opportunities Recovering and recycling wasted food through donation, salvaging, processing, anaerobic digestion, and composting strengthens infrastructure and creates jobs. Food recycling in these sectors employs more than 36,000 people, supporting local economies and promoting innovation.

Feed the World According to the Food and Agriculture Organization of the United Nations, from between 702 and 828 million people were affected by hunger in 2021. They predict that by eliminating food loss and wasted food we would have enough food to feed all the chronically undernourished. They also expect that we would not have to increase food production or put additional pressure on our natural resources to do so.

Saving Money

Estimating the Cost of Food Waste

Looking for more information on the cost of wasted food to households per year? Access the "Estimating the Cost of Food Waste to American Consumers" report.

Waste Less and Spend Less You or your organization can spend less and waste less by buying only the food you will use. Preventing wasted food can also reduce energy and labor costs associated with throwing away good food.

Pay Less for Trash Pickup Organizations might pay less for trash pickup by keeping wasted food out of the garbage. Some haulers lower fees if wasted food is separated from the trash and sent to an organics recycling facility instead of the landfill.

Receive Tax Benefits by Donating If you donate healthy, safe, and edible food to hungry people, your organization can claim tax benefits. The Bill Emerson Good Samaritan Act protects food donors from legal liability.