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How cities can reduce municipal food waste

[Food](#)[Waste](#)Originally Published: **January 2021**Author(s): **C40 Cities Climate Leadership Group, C40 Knowledge Hub**

Around a third of all food produced globally is either lost or wasted, generating vast quantities of methane and driving up solid-waste management costs. Indeed, food waste is the largest waste-sector contributor to cities' greenhouse gas (GHG) emissions and a source of potent GHG methane. At the same time, most cities are home to people who suffer from food insecurity, hunger and malnutrition because of insufficient access to food. By reducing the food wasted by households and food businesses and redistributing as much surplus food as possible, cities can tackle both of these problems together.

Measure current food loss and waste and aim to reduce it by 50% by 2030

Food loss and waste

Food waste is the inedible parts of food left over after consumption and the edible food purchased and discarded by consumers. **Food loss** is edible food that is lost or damaged in the production, storage, processing and distribution phases of the food lifecycle, before it reaches consumers and, typically, cities.



English

Start by quantifying and characterising the food lost and wasted. This will establish a baseline and inform the strategy for reducing it. The [Food Loss and Waste Accounting and Reporting Standard](#) provides a framework that cities can use to collect data about how much and what kinds of food are lost and wasted by households, restaurants, schools, hospitals, grocery stores and other food businesses. Cities should also measure how much food waste is comprised of edible food. The Natural Resources Defense Council offers guidance on estimating the types of food waste produced on a city level.

Target a 50% reduction in food lost and wasted by 2030, achieving at least a 25% reduction by 2025. This is a best-practice target in line with [Sustainable Development Goal 12.3](#) and has been adopted by the signatory cities to the [C40 Good Food Cities Declaration](#).

Raise awareness of why and how households can reduce their food waste

Most people do not waste food because they want to. Public awareness campaigns should focus on ways to reduce food waste in the context of its root causes; campaigns that focus on the scale and impact of food waste alone are unlikely to be successful.¹ For example, cities can make people more aware of the cost of food they might be throwing away, provide tools that prompt households to eat fresh food while it's still edible, or provide tips on food preparation and storage that can save time and money as well as reduce waste.

Cities can draw on established programmes and materials to build effective local awareness campaigns, particularly [Love Food, Hate Waste](#) (based in the United Kingdom) and [Save the food](#) (based in the United States). The Love Food, Hate Waste campaign in London demonstrated a 14% reduction in avoidable food waste in the first six months alone.² Resources from these campaigns are designed for one-way communication and require minimal staff time to implement. Additional examples of campaigns include [Curb Your Food Waste](#) in Los Angeles, [Food Waste Reduction Campaign](#) in Tokyo, and [Mad uden Spild](#) (Food without Waste) in Copenhagen.

The United States Environmental Protection Agency has also produced the [Food: Too Good to Waste](#) implementation guide and toolkit for local governments and community organisations designing more resource-intensive engagement on food waste.

Oslo's city-run challenge and training programmes helped families halve food waste

In 2019, the City of Oslo invited 30 families to participate in a four-week food-waste [project](#). The families weighed their food waste in the first week and participated in a short workshop, where they received tools and information on how to reduce their food waste, before returning home to implement them. The tools included a kitchen diary and labelling, similar to the 'eat this first' stickers shared by Alameda County, below. The

families weighed their food waste again in the fourth week; on average, they had cut their food waste by more than half, with the ‘winning’ family cutting its food waste by 95%.



In-fridge food-waste prevention sign from Alameda County, California

EAT THIS FIRST

StopFoodWaste.org

Plan Well Store Well Eat Well

Print this sign and use in the fridge as a reminder to eat perishable foods first.

StopWaste is a public agency in Alameda County, California. It has designed signage, such as this ‘Eat This First’ sign, to be placed in the fridge, to encourage households and businesses to designate a fridge area for foods that need to be eaten soon.³

Encourage food-waste reduction and recovery by hotels, restaurants, catering businesses and food retail

Food waste and recovery can have positive economic benefits for businesses and the local economy, and can create jobs. The average business is estimated to be able to achieve a 14:1 positive return on investment in reducing food loss and waste.⁴ Tried and tested ways for cities to influence food waste by businesses include:

- **Raise awareness of the business case for food waste reduction.** Investments in food waste reduction can quickly deliver a return. Read more about the business case for restaurants here. Campaigns and coalition building can help to raise awareness between businesses, consumers and organisations that support food waste reduction and rescue efforts. Examples of campaigns include

RescueDish D.C. in **Washington D.C.**, Food Waste Restaurant Challenge in **Denmark** and **Nashville**, English and 3R Conference in **Tokyo**.

- **Providing ongoing technical assistance to businesses on measuring and monitoring their food waste.** For example, **Philadelphia's** Office of Sustainability offers a spreadsheet that can help businesses to get started in measuring their food waste. The tool is designed to help estimate how much waste a facility generates to more easily understand opportunities for recycling and waste diversion. ReFED's Insights Engine offers a database of solutions for the most relevant and impactful interventions for meeting specific food waste reduction goals, offering a stakeholder-specific, comprehensive cost-benefit analysis of 40+ food waste reduction solutions.
- **Providing guidance and financial support to businesses to pilot new food-waste prevention efforts and to entrepreneurs making use of surplus food and food scraps.** For example, **Boston** offers the Zero Waste Toolkit for Restaurants and **London's** Food Save programme supported 170 small and medium enterprises to reduce food waste and redistribute surplus food to over 50 charities.⁵
- **Incentivise businesses to build reduction efforts into their accounting and operations.** For example, **Austin** has put forward the Organics Diversion Plan, while **Milan** offers tax breaks to retailers that donate of surplus food, and has developed a network of food re-distributor to absorb and redistribute the material donated. The city has four hubs that redistribute 120 tons of food per year. **Washington D.C.** also offers a tax credit for the donation of food to non-profits.
- **Implement restrictions that ban food retailers from disposing of food waste in commercial waste.** For example, **Beavertown** in the United States implemented a food scrap separation ordinance, requiring businesses that produce large amounts of food waste to compost food scraps. Similarly, **Philadelphia** introduced an ordinance that bans commercial properties from placing grindable food waste in commercial waste bins.
- **Create sector-specific policies and campaigns for food retail.** Food retail interventions offer high potential for food rescue, and many cities have started to build of support networks and infrastructure for food rescue to capture and redistribute food leftovers for a range of uses.

Tackling food waste in cities: A policy and program toolkit explains a range of policy and programme options available and how to determine which strategies might be most feasible and effective locally, focusing on strategies that balance impact with near-term feasibility.

Evidence and sector-specific options for food waste reduction and recovery are also available from the Waste and Resources Action Programme (WRAP), a non-profit based in the United Kingdom. WRAP works with cities and private companies to provide practical tools for producers, manufacturers and

retailers to cut their food waste, water usage and carbon footprint.



Lead by example by reducing food waste in city-run canteens and restaurants

Municipal authorities are often among the largest food purchasers in a city, and a significant source of food waste. Schools and other city-run canteens therefore offer huge potential for food waste avoidance and can offer an opportunity test approaches and lead by example. Hong Kong, for example, runs a Green Lunch programme in schools that seeks to reduce food waste through onsite portioning and other measures described in [Food Waste Reduction Good Practice Guide for Educational Sector](#). Zero Waste Scotland offers a [food waste monitoring toolkit for schools](#), and Love Food Hate Waste New Zealand provides advice on [how to reduce food waste in schools](#). City-run canteens should also lead on [healthy, sustainable food procurement](#) and [limiting single-use plastic foodware](#).

Expand systems for the safe donation of food and address policy barriers

Edible surplus food – food that has been produced but cannot be sold or used by the producer and would otherwise become waste – [can be redistributed to people through food assistance programmes](#) that provide food to those in need. Cities can directly connect food-surplus hotspots with food-aid programmes by collaborating with retailers to develop ways to ensure that this food is donated to those who need it most. Cities can also ease restrictions and regulations to allow food-surplus hotspots to donate edible surplus food more easily and establish tax incentives to discourage food waste and increase efficiency across the city food system.

For example:

- **Milan** offers a tax reduction to restaurants, supermarkets and bars that donate their surplus food.
- **New York City** has a [public food donation portal](#) to redistribute waste that would otherwise be sent to landfill.
- **Austin** has adopted an [ordinance](#) preventing restaurants from disposing of food waste in landfill. Restaurants must donate unconsumed food, send scraps to farms or compost it. The measure also stipulates that employees receive training on handling the waste.

Provide separate city-wide food waste collection and make food waste a resource

Effective food- and organic-waste management is integral to any city's zero-waste roadmap. By separating organic waste from dry recyclables, such as plastic and glass, cities can recover and treat this waste,

producing compost, renewable fuel, animal feed and other products. This reduces waste disposal costs, avoids the release of methane (a powerful GHG), creates jobs and supports local agriculture and other industries. Read *How cities can collect residential food waste* for advice on piloting and citywide rollout of segregated collection, and *How to manage food and organic waste in Global South cities* or *How to manage food waste and organics on the path towards zero waste* to learn more about treatment options.

Requiring households to separate their food waste from other waste also helps to raise awareness about how much food they are throwing away.

Don't waste good food to produce bad energy

While waste treatment by anaerobic digestion produces clean fuel, waste incineration is not the quick-fix solution to cities' waste-management challenges it is often made out to be, especially when it comes to food waste. Incineration is the most expensive way to produce energy and is very inefficient, as waste streams with high levels of food waste have a high water content. Without strong (and expensive) environmental controls, it produces toxic pollutants. Moreover, the energy produced from waste incineration is not clean or renewable. *Why solid waste incineration is not the answer to your city's waste problem* explains more.

Take steps to reduce food loss in supply chains

In many Global South cities, in particular, much food loss happens before it reaches consumers, often due to transport delays or poor storage conditions.⁶ While cities typically have limited control over supply chains, they can help to reduce food loss by strengthening urban–rural linkages and improving infrastructure. For example, cities can:

- Improve infrastructure at markets and distribution hubs in the city, such as sanitation and electricity for cold storage, to reduce market losses.
- Support collectives that provide value-added activities, such as industrial kitchens preserving excess fruit and vegetables. In Kenya, for example, a new dried mango product has significantly reduced rates of food loss in mango production. Until recently, around half of mango production was lost before it reached market; dried mango is more resilient to transport and storage.
- Investing in capacity building to support those producing and processing food entering the city to reduce food loss.⁷

For example, in **São Paulo**, the city is working to tackle food loss and waste simultaneously. The Sustainable Markets programme collects and reallocates food from the city's 800 weekly markets that can still be eaten (facilitated through the city's food banks), and composts what can't be recovered, amounting to 2,264 tons of food saved from landfill in 2020.



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