Quantifying the Sustainability Impacts of Food Banks

FRAME: Food Recovery to Avoid Methane Emissions

A New Methodology for Calculating Total Avoided Emissions by Redirecting Food Loss and Waste

Food loss and waste (FLW) is a critical yet often overlooked factor at the heart of efforts to combat climate change—and food recovery and redistribution organizations, such as food banks, can catalyze transformation of the food system to best address it. These organizations can reduce FLW at the source by keeping food intact within the supply chain and redirecting edible surplus to people in need. This not only benefits those who face hunger but also contributes to reductions in global emissions—especially methane. It is clearly critical for food banks to be able to continue growing their operations in a sustainable manner. Doing so, however, requires moving away from outdated business models of relying on donations alone. Food banks must also be able to access new sources of climate finance.

To measure the volume of methane avoided by food banks and assist in accessing climate financing, The Global FoodBanking Network, in partnership with the Global Methane Hub and working with the Carbon Trust, developed the first methodology for methane **to credibly report the avoided emissions achieved by redistributing potential food loss and waste.**

The methodology aligns with several United Nations Sustainable Development Goals (SDGs), most notably SDG 13 (Climate Action) by fitting climate change impacts, SDG 12 (Responsible Consumption and Production) by reducing food waste, and SDG 2 (Zero Hunger) by redirecting edible surplus to those in need.

THE FOOD LOSS AND WASTE CHALLENGE

Methane and other emissions that occur due to FLW reached up to **9.3 GtCO2e** in 2017, according to a 2023 study. Moreover, about **14% of the world's food is lost after harvest** and before it reaches the retail shops, and **17% is then wasted at retail and by consumers.** The food lost and wasted globally could feed **1.26 billion hungry people** annually. (FAO, 2022)

Recognizing the importance of immediate methane mitigation for curbing rising temperatures, more than 150 countries joined the Global Methane Pledge at the COP26 climate talks to reduce methane emissions by 30 percent from 2020 levels by 2030.

Puebla, Mexico, March 22, 2023: Celery is harvested at a farm outside Puebla to be donated to the local food bank.

FOOD BANKS AND SDGs

In 2015, United Nations member states adopted the "2030 Agenda for Sustainable Development," which lays out a common global blueprint for peace and prosperity with 17 Sustainable Development Goals (SDGs) that call for national policy action in a range of areas. One of the most important is SDG 13, which calls on countries to "combat climate change and its impacts" and to integrate relevant measures into national strategies. This has led countries to enact policies in pursuit of the goal such as emissions caps, carbon pricing, and the creation of markets for the sale of carbon credits. Food banks are a natural source for generating those credits. They contribute to climate-change mitigation in several ways, from recovering surplus food that would go to waste to reducing the environmental impact of food decomposition. They also minimize carbon footprints that would otherwise be associated with the transportation of recovered food.

QUANTIFYING IMPACT

To quantify the climate impact and co-benefits, food banks must arrive at a figure known as the **total amount of greenhouse gas emissions avoided, or tCO2eq,** this calculation not only addresses climate action but also contributes to several Sustainable Development Goals (SDGs).

The full report demonstrates how to calculate a separate, methane-specific mitigation figure—this is the primary indicator derived from FRAME's methodology—and it represents the difference between emissions in the "baseline scenario" and the "project scenario".

The precise calculations and methods are outlined in detail in the full report.

SDG 13 — CLIMATE ACTION

Food banks contribute to climate change mitigation by recovering and distributing surplus or unsold food that would otherwise go to waste.

The total amount of greenhouse gas emissions avoided (tCO2eq)—the primary indicator derived from this methodology—is calculated as the difference of baseline emissions, project emissions and leakage emissions.

The selected indicator to monitor the contribution to SDG 13 is the total amount of greenhouse gas emissions avoided (tCO2eq).

SDG 2 — ZERO HUNGER

Food banks contribute to ensuring the nutrients of food products that have already been generated are not wasted and remain in the value chain for human consumption.

The loss and waste of food has associated costs in monetary and environmental terms, but the most impactful cost is in terms of the nutritional value each food holds. When food is wasted, the nutrients it contains are also wasted.

The methodology aims to demonstrate and increase the availability of energy and nutrients in relation to recommended daily requirements under a hypothetical equitable distribution of food.

The selected indicator to monitor the contribution to SDG 2 is: energy and nutrient contribution by distribution days, nutrient and age and gender group.

SDG 12 — RESPONSIBLE CONSUMPTION

This methodology provides data-driven evidence that the work done by food banks across the globe is significantly contributing to reducing the harmful effects of climate change caused by food loss and waste.

It can be quantified by reporting the total mass of food loss and waste recovered (kilograms) in the reporting period, or by disaggregating this figure into the total mass per donation origin (e.g. retail, farm) to provide a separate total food loss and total food waste figure.

The selected indicator to monitor the contribution to SDG 12 is: total mass of food loss and waste redistributed in the reporting year.

SDG 8 – DECENT WORK AND ECONOMIC GROWTH

According to The Sustainable Development Goals Report 2023 (UN, 2023), projections indicate that global unemployment is expected to decrease further to 5.3% in 2023. However, this indicator is calculated as an average and there are populations that are more susceptible to unemployment for which the efforts to decrease unemployment and wage gaps are crucial.

Food banks generate employment opportunities. They typically have staff positions to manage day-to-day operations, coordinate volunteers, handle administrative tasks, and work on community outreach.

The selected indicator to monitor the contribution to SDG 8 is the FTE (Full-Time Equivalent).

METHODOLOGICAL CONSIDERATIONS IN THE FULL REPORT

The FRAME methodology is only applicable to non-profit organizations that undertake projects to divert donated, non-spoiled food from becoming potential FLW in both human consumption and non-human consumption scenarios. While the potential FLW may be sourced from various points along a food item's life cycle (e.g., farms, logistic sites, warehouses, hospitality, industrial sites, or retail), the activities undertaken by a food bank must not simply shift it from one end-of-life destination to another.

All food-related data (e.g., quantity, classification) that applies to the baseline and project scenarios must be from the same reporting period as the data for the project scenario. Additionally, the methodology assumes that end-of-life emissions of inedible parts as well as any packaging of the FLW when it arrives at a food bank are the same for both the baseline and project scenarios. However, it does not consider what happens to the food once it leaves the food banks and reaches beneficiaries (due to lack of data and control over how or if the beneficiaries consume the food).

The avoided emissions calculated are estimations based on best available data. The impact is based on data provided by GFN and may be impacted by a variety of factors, and where data was not available this has been supplemented by secondary sources.

To learn more visit foodbanking.org/frame-methane-methodology.

ABOUT

The Global FoodBanking Network
Food banking offers a solution to both chronic hunger and the climate crisis. GFN works with partners in over 50 countries to recover and redirect food to those who need it. In 2023, our Network provided food to more than 40 million people, reducing food waste and creating healthy, resilient communities. We help the food system function as it should: nourishing people and the planet together. For more information, visit foodbanking.org.

The Carbon Trust
The Carbon Trust is a global climate consultancy driven by the mission to accelerate the move to a decarbonised future. We have been climate pioneers for over 20 years, partnering with businesses, governments and financial institutions to drive positive climate action. From strategic planning and target setting to activation and communication—we turn ambition into impact. To date, our 400 experts have helped set 200+ science-based targets and guided 3,000+ organisations and cities across five continents on their route to Net Zero.