



Mission Multiplier: The Cross-Cutting Case for Food Waste Reduction

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Affordability

Food that is produced, purchased, and never eaten carries a cost, and that cost does not disappear. It surfaces in household grocery budgets, in the supply reaching markets, and in the prices and fees that absorb waste along the way. This spotlight traces where those costs sit, where capital can reduce them, and why the same intervention pays dividends well beyond affordability.

Report Author: Erik Ivester, ReFED

About the Series

Whether your mission is centered on economic resilience, public health, climate, biodiversity, or other areas, progress often depends on addressing challenges that cut across systems—especially those shaped by the global food system. As that system has grown more complex to feed a growing population, it has placed mounting pressure on natural resources and supply chains, with cascading effects on people, animals, the planet, and the economy.

One of the most overlooked ways to ease that pressure—and to accelerate progress across multiple goals at once—is addressing the roughly one-third of all food produced but never sold or eaten. Wasted food also means wasted land, water, labor, dollars, energy, and nutrients, with ripple effects across affordability, animal welfare, biodiversity, public health, regenerative agriculture, and super-pollutant mitigation. Yet food systems receive [under 3%](#) of public climate finance—and less than 6% of that targets loss and waste. For philanthropic funders and mission-driven investors, that gap is a powerful, underutilized opportunity to advance core priorities faster while relieving pressure on the broader food system.

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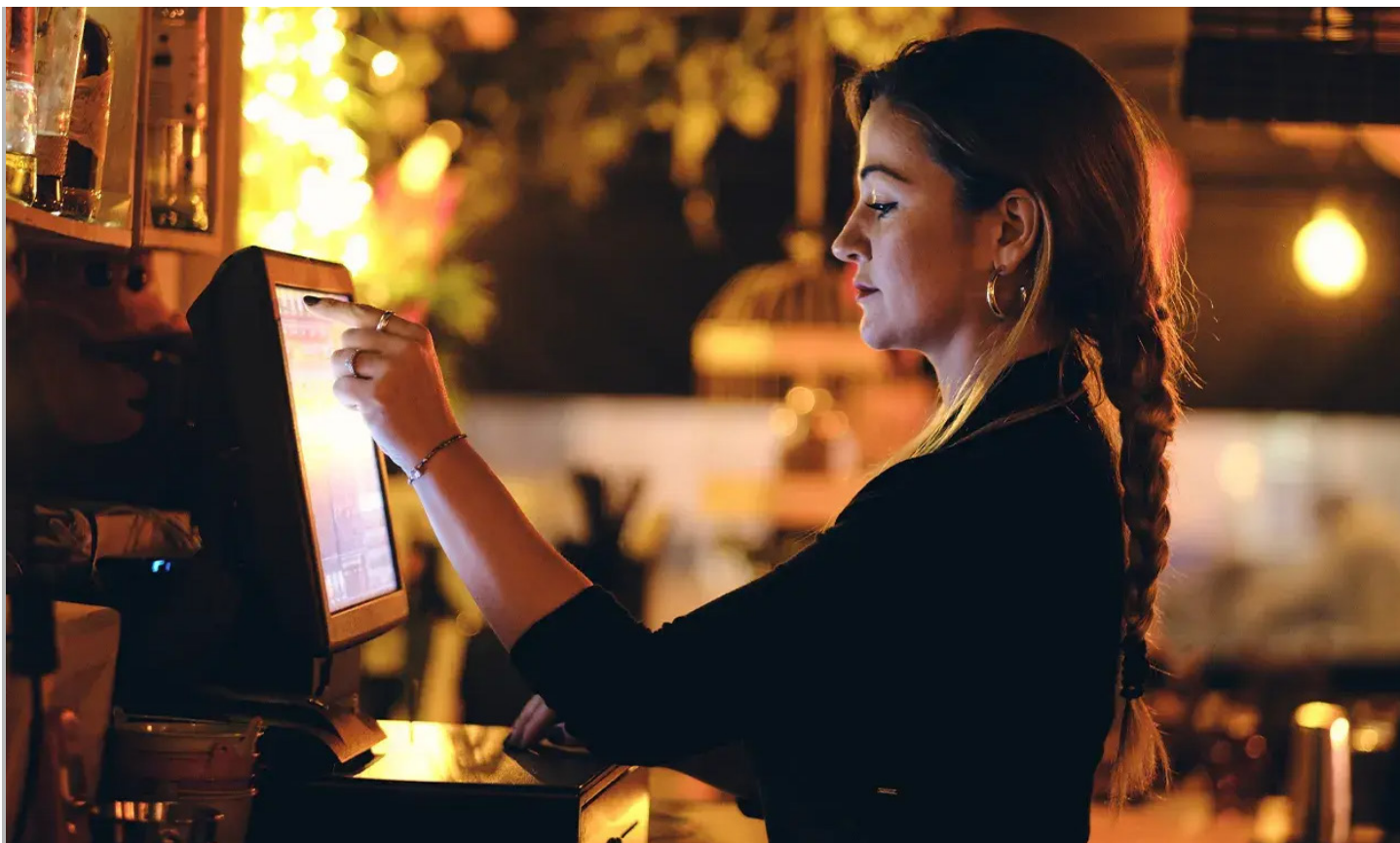
Introduction

After housing, food is one of the largest non-discretionary expenditures a household faces in every economy—and in lower-income contexts, it is often the **single largest category** of spending. When food costs rise, few other budget lines can absorb the pressure, and the burden tends to fall hardest on those with the least room to spare.

That pressure has been building. The FAO Food Price Index **peaked at 159.3 points in March 2022**, its highest level since the series began in 1990, driven by the compounding shocks of the COVID-19 pandemic and the war in Ukraine. Although nominal prices have moderated since that peak, retail food prices remain structurally elevated relative to pre-pandemic baselines. Food inflation also continues to outpace general inflation in many low- and middle-income economies: the World Bank's Food Security Update for Q1 2026 found that **food price inflation exceeded overall inflation in 57.1 percent of the 140 countries with available data**, with the highest rates concentrated in low-income countries.

That burden is unevenly distributed, and it shows up clearly in how food expenditures scale with income. Globally, **food expenditure shares rise sharply as income falls**: households in high-income countries spend an average of 14% of total expenditures on food, compared to 27% in upper-middle-income countries, 38% in lower-middle-income countries, and 52% in low-income countries. Households under pressure from high food costs respond in predictable ways—substituting toward lower-cost staples, drawing down savings, and in the most constrained contexts, reducing how often they eat.

Affordability, in other words, is not only a question of income. It is also shaped by the structural costs that flow through the food system before food ever reaches the household, and by the inefficiencies that consumers absorb on the way out. This is where food waste reduction becomes a cross-cutting intervention on the affordability crisis. The evidence bears this out. For example, IFPRI modeling found that halving food loss and waste in Bangladesh, Kenya, and Nigeria would **lift up to 13 million people out of poverty** through economy-wide income gains, while also improving diets through availability and lower prices of nutrient-dense foods.



How Food Waste Reduction Enables Impact

Food waste reduction can improve affordability through three distinct mechanisms, each of which operates differently depending on context.

Household economics

In high-income economies, the largest share of consumer-facing food waste occurs in the home, which means the savings from reducing it flow directly back into household budgets. ReFED's [2026 U.S. Food Waste Report](#) estimates that U.S. consumers spend an average of \$762 per capita each year on food that ultimately goes to waste, totaling \$261 billion nationally.



Supply availability

In low- and middle-income economies, the picture looks different: the [largest share of food](#) loss occurs between harvest and market, driven by gaps across the upstream value chain, including harvest equipment and timing, on-farm and aggregator-level storage, cold chain, transportation, and processing capacity. Recent estimates find that Sub-Saharan Africa [loses up to 50%](#) of the fruits and vegetables it produces annually, with comparable ranges observed in country-level studies in Ghana and across East Africa. Cumulative post-harvest losses for major cereals, as tracked by APHLIS, are [lower but still substantial](#), typically running 10-20%. Reducing these losses [increases the effective supply](#) of food reaching markets. In well-integrated markets, that added supply may translate into modestly lower retail prices spread across the market; in more localized markets, where supply cannot be sourced from elsewhere, the same increase can have a larger effect on local prices and availability.



Cost pass-through

A third mechanism operates through the inefficiencies already built into retail prices and municipal fees, which show up in two main ways:

- **Retail and supply chain losses:** Grocery retailers globally operate on [extremely thin net margins](#), typically between 1% and 3%, which means shrink and spoilage represent a meaningful line item that retailers price against. [New modeling](#) by the Centre for Economics and Business Research for Avery Dennison estimates that food waste across the global retail supply chain—measured from post-farm processing through point-of-sale—is equivalent on average to 33% of retail supply chain revenues, with total economic cost projected at \$540 billion for 2026. These costs aren't passed through to consumers one-for-one, but they are structurally embedded in higher prices that households pay.
- **Disposal costs:** Food and organic waste make up the [largest component of municipal solid waste](#) globally, and in the United States specifically, it is the single largest component of landfilled material, accounting for [up to 24% of the total](#). U.S. landfill [tipping fees are also climbing](#), rising 10% in 2024 to a national average of \$62.28 per ton, the steepest single-year increase since 2022. These disposal costs ultimately flow back to households—directly, through municipal waste fees that are often regressive and billed via property taxes or utility charges, and indirectly, through the operating expenses of food businesses, which surface again in retail prices.



Funding Food Waste Reduction to Support Affordability

For funders focused on affordability and economic mobility, food waste reduction offers several distinct capital deployment pathways. The solutions below are organized by the affordability mechanism that each solution primarily activates.

Reducing what households spend or waste at home

- **Date labeling standardization.** One of the more tractable drivers of household food waste is simple confusion about date labeling. Terms like “Sell By,” “Use By,” and “Best Before” typically indicate peak manufacturer quality rather than food safety, yet consumers routinely treat them as safety cutoffs. In the United States, ReFED found that this confusion drives an estimated **\$19.2 billion in annual losses** and pushes **3.5 million tons of viable food** into the residential waste stream each year. Organizations like the **Zero Food Waste Coalition** are working to standardize labeling language to close this gap.
- **Meal planning and right-sized grocery purchasing.** Because the largest share of consumer food waste in high-income economies happens in the home—much of it from over-buying and food spoiling before it’s used—AI-enabled meal-planning tools represent another meaningful lever. Platforms like **Remy** help households plan around what they already have, buy only what they’ll use, and cook before food expires.
- **Imperfect/secondary produce markets.** A related opportunity lies in imperfect or secondary produce markets. Produce that fails cosmetic standards but remains nutritionally intact is routinely culled at the farm, distributor, or retail level. Secondary-market platforms such as **Misfits Market** and **Hungry Harvest** route this produce directly to consumers at meaningful discounts, converting what would otherwise be an unrecovered loss into a direct reduction in household grocery spending.
- **Markdown alert and surplus recovery apps.** A growing share of retail and foodservice inventory nearing its expiration date is also finding its way to consumers directly, through apps that connect shoppers with discounted surplus food, typically up to 50% off conventional retail. **Too Good To Go** and **Flashfood** are prominent examples of this model in action.

Expanding effective supply to market

- **Cold-chain and post-harvest infrastructure.** In low- and middle-income countries, one of the central constraints on affordability is supply itself: perishable crops often spoil before ever reaching consumers, tightening markets for the fruits, vegetables, and animal-source foods that matter most nutritionally. Cold chain and post-harvest infrastructure—the kind of work being advanced by organizations like [Keep IT Cool](#)—directly addresses this bottleneck.
- **Harvesting technology.** Some crops never make it to market at all and are left unharvested due to labor shortages, timing, or cost. Labor-saving and autonomous harvesting

technologies, such as those developed by [Fieldwork Robotics](#), increase the share of a crop that is actually picked and sold, lowering harvest cost per unit and expanding the effective supply reaching consumers.

- **Early-chain shelf-life extension.** Low-cost preservation applied at or near the farm, like the approach taken by [GreenPod Labs](#), keeps produce saleable longer as it moves toward market, which is particularly valuable where cold storage is scarce or unaffordable and is a direct complement to cold-chain investment.



These supply-side solutions are likely to increase access and affordability for consumers over time, but they typically require [substantial upfront investment](#) and may carry long payback periods, raising the risk that costs rise before they fall—particularly if infrastructure is financed at commercial rates in thin-margin supply chains. [Concessional and blended climate finance](#) address this directly, lowering the cost of capital so infrastructure can pay for itself through avoided losses rather than pass-through pricing. [Development finance institutions](#) are already investing in cold chain on these terms, and [philanthropic capital](#) has proven models like solar cold storage at smallholder scale ahead of commercial investment.

Reducing inefficiencies built into retail prices

- **AI-driven inventory management and demand forecasting.** Mismatches between ordering, shelf life, and actual demand drive a substantial share of retail and foodservice waste, embedding cost inefficiencies that businesses ultimately price against. AI-enabled forecasting tools, offered by companies like [Freshflow](#) and [Shelflife.ai](#), [reduce over-ordering and spoilage at the shelf](#)—and the same demand signals can be shared upstream to inform procurement volumes and farm-level production planning, preventing overproduction before it starts.

- **B2B surplus and secondary market recovery.** Beyond the consumer-facing markdown apps described above, business-to-business platforms such as [Sotira](#) reroute surplus and short-dated inventory between businesses before it becomes a loss. This recovers value upstream of the shelf and trims the waste-related costs that retailers and manufacturers would otherwise carry into their pricing.



Case Study Dual Impact in Action

The **Acumen Resilient Agriculture Fund** (ARAF) offers a clear illustration of this mechanism in practice. A \$58 million blended finance vehicle anchored by the Green Climate Fund, ARAF invests in climate-resilient agribusinesses across East, West, and North Africa. While its primary mandate is climate adaptation, ARAF's investment thesis sits squarely at the intersection this section describes: by backing agribusinesses that connect smallholder farmers directly to markets, the fund increases the share of production that reaches consumers and reduces the losses that occur along the way.

ARAF's investments in aggregator platforms that bypass traditional intermediaries do more than improve farm-gate prices; they shorten the time and distance produce travels before sale, cutting into the loss that accumulates at every additional handoff. One ARAF portfolio company, a tech-enabled fruit and vegetable business in Tanzania, improved supply chain logistics to bring post-harvest losses below 1%, alongside income increases of up to 20% for participating smallholder farmers. Across the broader ARAF portfolio, 80% of surveyed farmers report both increased income and increased production, a combination that improves household purchasing power and expands the supply reaching local markets at the same time.

ARAF's pipeline also includes solar-powered cold storage and cold chain companies operating on pay-as-you-go and shared-service models, the intervention category identified earlier as a primary lever for expanding effective food supply in low- and middle-income countries. The pathway from investment to affordability impact is direct: less post-harvest loss means more marketable supply, available more consistently and at more accessible price points.



"Post-harvest loss is a material constraint in virtually every one of our investment cases. Across Sub-Saharan Africa, smallholder farmers lose 30-40% of produce post-harvest, simultaneously depressing farmer income and reducing the effective food supply reaching local markets."

**Rebecca Mincy, Investment Director at
Acumen Resilient Agriculture Fund**

If you'd like to learn more about how your funding can support multiple missions, please reach out to our Capital & Innovation team.



capitalinitiatives@refed.org



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