

Study On Food Loss: Role Of Manufacturers And Retailers

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Abstract

Research has indicated that annually almost 30 to 40 percent of the world's food is lost or wasted. This devastating fact has drawn attention in the global food crises which have resulted from knock-on-effects of the COVID-19, Ukraine war, and climate change. Statistics state that one in ten people do not get enough to eat, which amounts to nearly 800 million suffering from hunger. On the other hand the consequences of food loss and waste will add to the starvation. 'Food loss' could happen during harvest time or after harvest, and while it is moving to the retailer or consumer. The loss of the food itself is awful and its secondary effects are alarming as well. The water consumption linked to food loss and waste amounts to approximately one-fourth of the world's freshwater supply. Greenhouse-gas (GHG) emissions from food loss and waste constitute nearly 8 percent of the global total. This research attempts to identify the reasons for food loss and find means of converting them to opportunities.

Keywords: food loss, food waste, grocery retailer, farmers, supply chain

Introduction

Is food loss the same as food waste?

The two terms are connected but divergent. Food waste, according to the Food and Agriculture Organization (FAO) of the United Nations, is "the discard of edible foods at the retail and consumer levels." meaning, food waste happens downstream, during either the distribution stage while it makes its way from a distributor's store to the retail shelf or in the consumption stage when consumers throw away left overs. On the other side Food loss, happens upstream: the FAO defines it as "the decrease in edible food mass in the production process at post-harvest stage, and processing of the product in the food chain."

The Government Regulatory bodies and industry groups have taken initiatives to address both the problems of food waste and food loss. In the United Nations' Sustainable Development Goal 12.3 attempts to "halve per capita global food waste at the retail and consumer levels and reduce food losses during production and supply including post-harvest losses" by 2030. Due to the distended visibility of the food waste, large scale efforts are made to understand and address the problem. People see food being wasted in stores, restaurants, and households. But more than half of the food that is not consumed by humans are wasted during or after harvest. Therefore reducing food loss should be treated as a societal and environmental priority. The study of the farm-to-retailer food supply chain reveals the fact that food loss is a result of human inefficiencies, and its hidden costs are often equal to or greater than retailers' net profit, even amongst the best-performing ones making it a *business* priority as well. Control of 50 to 70 percent of food loss is possible if food manufacturers and retailers who are the centre of the food value chain work together. Almost two-thirds of the food that would otherwise be lost could be redirected for human consumption; the remaining one-third would go to optional utilization, such as production of bio-based materials or animal feed. Business returns would be significant as companies would gather economic and cash flow benefits while concurrently improving their scope 3 emission footprint. McKinsey & Co in their research showed that retailers could reduce their cost of goods sold (COGS) by 3 to 6 percent, manufacturers by 5 to 10 percent. Grocers and manufacturers could impound 80 billion dollar share in the new market by developing innovative businesses from food that would otherwise be lost. They could help cut CO₂ emissions and the associated costs by 4 to 9 percent.

Where and how does food get lost?

More than two billion tons of food are lost or wasted every year. About half of this happens upstream: during the harvest, postharvest handling and storage, and processing stages

Upstream (Food Loss)				Downstream (Food waste)				Total lost & wasted
Total Food Produced	Harvest 6%						16% Upstream	
		After Harvest 5%					14% Downstream	
			Processing 5%	84			Food remaining after loss and waste 70%	
				Food remaining after upstream loss	Distribution 5%			
						Consumption 9%		

Exhibit 1 Source: Food and Agriculture Organization of the United Nations; press search

It is observed that meat and dairy have a high environmental impact per unit produced for instance it takes more than 1,000 gallons of water to produce a pound of beef, meat accounts for only about 3 percent of food loss; dairy another 5 percent. Three other food categories—fruits and vegetables, cereals, and roots and tubers account for much of the food loss and the associated CO₂ emissions and water use . Such categories should therefore be the focus of loss reduction efforts. Precisely where in the supply chain does food get lost, and what factors contribute to this is what we need to study . The Consumer Goods Forum and its members who work closely with leading European grocers and distributors investigated into the farm-to-retailer journey and revealed some interesting facts. They made tomato production their test case. They choose tomatoes because 1) 50 million to 75 million tons of them are lost upstream every year that is more than any other fruit or vegetable. Tomatoes are grown and eaten all over the world They are available all the year-round, and can be eaten fresh or processed.

What happens to field grown tomatoes to be sold fresh in developed countries shows, in developed countries, out of every 100 tomatoes only 59 to 72 make it to a store shelf. In the developing world, the numbers are grimmer: only 35 to 58 make it to the store.

1. Tomatoes are ready for harvest (100 nos)
2. During harvest, some are left in the field (can be used as organic fertilizer, turned into animal feed or biofuels, or simply discarded) 19–27 lost. Therefore 73-81 tomatoes survived the harvest.
3. After being transported (eg, in plastic crates to the handling stage), some end up being discarded 1 or 2 lost . So 71 – 80 tomatoes survive transportation.
4. Tomatoes are washed before being graded and sorted, during which some are “outgraded” and end up being discarded 3 or 4 lost (67 to 77 tomatoes survive handling and grading).
5. Tomatoes are packaged into containers according to customer specifications, during which some get damaged or further outgraded and end up being discarded 1 or 2 lost . 65–76 tomatoes survive processing and packaging.
6. When tomatoes are loaded for delivery to distribution centers, some are damaged, packed incorrectly, mislabelled, or sent to the wrong destination and are either discarded or returned to processing facilities for disposal 4–6 lost Only 59–72 tomatoes make it to the retailer

The research revealed that some food loss results from exogenous factors, such as weather events, or suboptimal practices within a specific stage of the supply chain, such as poor equipment aintenance—

but part of the loss is linked to the interdependencies and interactions among the players in the value chain. Growers may overproduce because they are uncertain about market demand.

How companies can turn food loss into big wins

Since food loss happens primarily at the farm, the primary concern is how can food manufacturers and grocers help reducing loss. An effective action plan would involve, first, establishing a baseline and setting targets; then systematically developing and implementing initiatives; and, finally, putting in place the enablers for lasting change.

Ultimately, addressing food loss will require mindset shifts by all stakeholders. Food manufacturers and retailers will need to see food loss as a result of inefficiencies and missed opportunities across production, procurement, R&D, the supply chain, and sales—not as an inevitable cost of doing business or a niche topic that concerns only the sustainability department. They should see reducing food loss as a potential value pool: an opportunity to improve both the top and bottom lines.

Create transparency and set targets

Quantifying the food loss and creating accountability for it is not a precise science. Hence the measurement techniques and metrics are still being defined and debated. But that cannot be an excuse for companies to do nothing. The grocers and food manufacturers should aim to gather accurate information through a various sources and techniques, such as interviewing internal teams, investigating data from suppliers, and reviewing third-party research. Working alongside with the suppliers will help to understand and monitor food loss, perhaps by using the on-farm food loss measurement protocols which are available online. Targets should be set for both the company and suppliers, and integrate the food loss visibility into incentives. Some of the visionary companies are actively engaging with their suppliers to map the “hot spots” and understand their causes in the food loss and supply chain. Some companies are developing database of suppliers performance across location and providing public access to it. While others are conducting an annual external audit and third-party assessment of suppliers’ performance on this issue. A few business under their best-practice are using digital technologies, like blockchain, to make products traceable at every stage along the journey from farm to store.

It is not advisable to wait for perfect data or gather information just to sense the scope of the problem. Generating alertness of how much loss happens and where it happens is an important first step in bringing in change. Research divulges four levers that retailers and food manufacturers can pull to make meaningful impact: 1) minimizing loss during production and processing, 2) minimizing loss during transit, 3) selling more of what is produced, and 4) structurally preventing loss (Exhibit 2). Each lever gives a set of potential actions. Some require significant investment and new ways of working. No single combination will be right for every company, all stakeholders will have to select the mix that best fits in their context. At the end all will pay off, resulting not only reduction in food loss but also a more efficient value chain, EBITDA improvements, and lower CO2 emissions.

Grocers can reduce upstream food loss by 50 to 70 percent.

Minimize production/processing loss	<ul style="list-style-type: none"> • Launch efforts to collaborate with suppliers to let go constraints, maximize yields. • Achieve operational excellence in food processing
Minimize loss in transit	<ul style="list-style-type: none"> • Use supply chain infrastructure to uphold product. • Optimize supply chain to reduce uncertainty and have improved supply.
Sell more of what is produced and processed	<ul style="list-style-type: none"> • Evolve procurement approach to enable value creation/loss reduction program. • Turn hidden losses into value streams.
Good infrastructure to prevent loss	<ul style="list-style-type: none"> • Improve crop resilience through technology/ innovation. • Strengthen agri-infrastructure/ecosystem in country

Exhibit2 shows examples of food loss programs that a food manufacturer or a retailer could implement.

Conclusions

Grocers and suppliers should work closely to match supply and demand : This will require exceptional and timely communication with transparency among the players in the value chain. Retailers should give farmers information about expected demand and farmers in return need to give retailers an insight into their production plans. Companies are preparing to engage in long-term planning with their suppliers, and working together to bring in consensus on the volume and mix of crops.

Refurbish procurement practices: People should move away from a mindset of treating food just as a commodity, and instead consider creation of a structured supplier collaboration efforts or entering into innovation-focused partnerships. When drawing contracts and creating incentive structures or establishing performance metrics, the suppliers should not be preferred only on the price that they offer, but one needs to mull over their food loss reduction efforts. In addition, they should regularly review specifications and look for opportunities to make them less stringent, without compromising food safety or sell-through. For instance, consumer surveys may reveal consumers have developed a higher demand for color variations than in the past, or that shoppers don't pay much attention to the size of a particular fruit variety.

Discover ingenious ways to turn food loss into value: There is enormous potential to sell all the food that farmers produce. Food that would otherwise be lost can be processed into new products leading to a thriving business. There should be deliberation for a dedicated R&D capital for developing new revenue flow from nonmarketable food, for instance, AB InBev, invested \$200 million in processing plants to turn its barley by products into a protein and fiber ingredient. It developed two new businesses as a result: a dairy-free protein drink sold under the Canvas brand and a protein ingredient that AB InBev now sells to other food manufacturers.

Facilitate true and lasting change: In any given food business reduction in food loss won't be treated as a strategic priority unless it has the backed by the C-suite which refers to **a company's top management** . In an informal survey, industry leaders pointed to feeble governance as the biggest roadblock in the implementation of food loss programs in their companies. Therefore one of the most important enablers for significant and sustained change, is a strong governance model with cross-functional accountability encircling procurement, active R&D, the supply chain management, production, marketing, and finance. Clear responsibilities and objectives along with KPIs at the individual, functional, and enterprise level is equally important. Designating an vendor for each food loss initiative and aligning all measures will help ensure progress. New performance metrics may

include, the volume of food lost, the profit from up cycling, or the revenue gained from saving food that would otherwise be lost.

Stakeholder management: is a critical enabler. Suppliers, consumers, and other participants in the value chain can be persuaded to become allies and supporters of loss-reduction efforts rather than inhibitors. Manufacturers and grocers can create and increase awareness of the problem among the farmers and suppliers, to help them see food loss as an inefficiency instead of an inevitability. On the consumer side, targeted marketing programs and educational campaigns can help consumers understand how to reduce food loss, which could in turn enable the implementation of upstream measures, such as less-exacting cosmetic specifications for fresh produce.

The unfortunate reality is that food loss is projected as no one's problem. No individual or business players own and defend the issue. In a true sense, companies have had the luxury of not paying too much attention to food loss. This outlook should soon change: as the world moves toward a impending food emergency and as public awareness of the issue grows, external stakeholders will become conscious about food loss and, as a result, more demanding. They will compel retailers and manufacturers to act. Addressing food loss is no more just a concern and soon would be a compulsion.

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