EXECUTIVE BRIEF

Maintain a sustainable food future from farm to fork

Food & Beverage

Amid the current global trends surrounding climate change, waste reduction, economic growth, and political transparency, a growing awareness has emerged worldwide around sustainable practices in both the private and public sectors. For food and beverage industry enterprises, sustainability can be affected at nearly every stage of the supply chain—from sourcing and processing to distribution and retail. Each of these distinct supply chain functions can activate sustainable initiatives within their own area, and they're all deeply interconnected. A change in any one area of the food and beverage supply chain has a sustainability impact on the other areas. When you use cloud solutions to create change, it makes it easier for stakeholders in each arena of food and beverage to break down any communication silos and work together to shift the ways food is produced and distributed.

Defining sustainability

According to the United Nations Brundtland Commission, sustainable development can "ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs."[1] Similarly, the UN Environment Programme states that sustainable food systems deliver "food security and nutrition for all in such a way that the economic, social, and environmental bases to generate food security and nutrition for (current and) future generations are not compromised." Such sustainable food systems are vital to creating and consuming "sufficient, affordable, and nutritious food, while conserving the natural resources and ecosystems on which food systems depend."[2]

In addition to environmental responsibilities, a sustainable food and beverage industry must take into account social responsibility: Are employees such as farmers or factory workers receiving living wages? Are animals being treated humanely? Are end-consumers provided with transparent information about the quality of their products?

Impacting the industry

In food and beverage, sustainability is often associated with farming or the environment. The reality is that sustainability is woven throughout the entire food supply chain. Food processing, or transforming agriculture into edible food, exists to meet the goal of feeding the world, which is a primary driver for sustainability initiatives.

This goal, however, is complicated due to a growing world population and scarcity of resources. According to the World Bank, "Global population was around 3 billion in 1960. By 1987, in less than three decades, it had surpassed 5 billion and there were around 7.6 billion people in the world in 2018."[3] At the same time, 60 to 70% of the world's ecosystem is degrading more rapidly than it can recover.[4]

Because of this, the food processing industry is working to create awareness around issues or enact policies to protect the environment. On the farm, crop rotation is being used to combat the effects of soil erosion, while ongoing research is being conducted to reduce methane gas emission from cow farts and burps.[5] At the same time, legislature is being passed to deter plastic bag usage at the store, while agency programs are encouraging consumers and restaurants to make use of "ugly produce" to avoid food waste. In the manufacturing process, companies boast about their attempts to lessen energy consumption and reduce waste, especially in factories.

Without doubt, sustainability and eco-friendly initiatives have gone from niche to mainstream. Food and beverage enterprises no longer treat sustainability as a "feel good" fad, but rather a fundamental necessity for long-term viability and improved profitability.

Balancing food supply, sustainable agriculture, and more

With a world population estimated to reach 10 billion by 2050, the Food and Agriculture Organization (FAO) of the United Nations cites that "feeding this expanded population nutritiously and sustainably will require substantial improvements to global, regional, and local food systems that provide decent employment and livelihoods for producers and every actor along the food chain, offer nutritious products for consumers, and do so without damaging our natural resources."[6]

One response to this is sustainable agriculture, where food manufacturers employ methods that to promote soil health, reduce water use, and minimize pollution levels on the farm.

At the same time, retailers and consumers are encouraged to seek out "values-based" food brands that practice methods promoting farmworker wellbeing, that are environmentally friendly, or that strengthen the local economy.[7]

Other responses include sustainable manufacturing and packaging. Companies are seeking to manufacture food with minimal inputs (such as raw materials, water, and energy) in order to limit the total impact of food processing. Furthermore, because 95% of the environmental impact of packaging is from the production of the package, companies are also focusing on reducing material use and choosing recycled content.[8]

Beyond the growth, manufacturing, distribution, and consumption of food itself, the philosophy of sustainable agriculture also embodies broader principles that "support the just treatment of farm workers and food pricing that provides the farmer with a livable income."[9]

Fighting food loss and waste

A significant portion of consumable food is never eaten. According to the FAO, it's estimated that one third of all food is lost or wasted between the farm and the plate. Socio-economically, losses tend to occur "near the farm" in lower-income regions; waste is mainly "near the plate" in higher-income regions.

In a report by the World Resources Institute (WRI), "The most immediate reasons food leaves the human food supply chain tie back to concern about a food's safety or suitability for consumption, or there being no perceived use or market for it." These causes are further exacerbated by "deterioration or suboptimal quality, or issues such as the food's appearance, excess supply, and seasonal production fluctuations."[9]

Deeper still, causes of food loss and waste are amplified by several, closely interrelated drivers:

- Technological drivers: Poor infrastructure; inadequate equipment; and suboptimal packaging
- Managerial drivers: Inadequate food management practices, skills, or knowledge; inflexible procurement practices; poor supply and demand forecasting and planning; and marketing strategies
- Behavioral: Norms and attitudes; lack of awareness; and concerns about possible risks
- Structural: Conditions in demographics; climate; policies and regulations; economics; and financing that lead to food loss and waste

Proposed by WRI, one way to counteract these challenges is taking the "Target-Measure-Act" approach. First, companies and government agencies set targets, preferably aligned with the UN's Sustainable Development Goal of 50% reduction of food loss and waste by 2030. Second, the next vital step to managing food is to measure the amount of food lost and wasted, or quantify it within the supply chain. Third, take action steps based on knowledge and data to implement a variety of interventions throughout the supply chain.[10]

The role of technology in sustainability

When you leverage the accelerated, analytical, and flexible functionality of cloud solutions, your F&B enterprise can move sustainability efforts forward throughout the entire supply chain. Using end-to-end capabilities, cloud technology can provide the speed, scalability, global reach, and agility required to ensure greater food for people and the planet while optimizing profitability for the organization.

Supply chain optimization

Connected supply chains help ensure timely delivery of ingredients and manage traceability. Collaboration and data sharing are key strategies employed by many supply chains to improve performance, reduce inventory, increase availability, and analyze sustainable efforts—no matter what strategy is employed in the distribution chain.

Asset utilization

Asset management solutions can help improve overall equipment effectiveness. By taking a proactive approach to your asset management strategy, organizations can increase equipment uptime, extend asset lifecycles, support sustainability initiatives, minimize non-compliance issues, and reduce safety issues.

Formula management

Product lifecycle management (PLM) solutions will help companies race to market with new flavors, new product offerings, and new ways to package foods destined for restaurants or grocery store shelves, while ensuring compliance with all regulations. PLM solutions help ensure that land, animals, and other natural resources are not compromised on the way to newness.

Analytics and business insight

Using a cloud platform gives food manufacturers intuitive, built-in reporting capabilities. With networked business intelligence, modern UI, and productivity tools, organizations can identify potential consequences and gain powerful, actionable insights for sustainability success.

Technology designed for F&B helps to improve overall efficiencies that result in improvements in sustainability across the supply chain. At first glance this may seem like a "feel good" initiative, however it is foundational for food industry growth and profitability in the years to come.

[1] World Commission on Environment and Development, Our Common Future, 1987, p. 16.
[2] "Food and food waste." UN Environment Programme
[3] Suzuki, Emi. "World's population will continue to grow and will reach nearly 10 billion by 2050." The World Bank Data Blog, July 8, 2019,
[4] "Environment." The World Bank
[5] Volpicelli, Gian. "The strange war against cow farts." WIRED on Climate Change, December 1, 2018,
[6] "Food systems: Our approach." Food and Agriculture Organization of the United Nations
[7] "What is sustainable agriculture." UC Davis Agricultural Sustainability Institute
[8] "Principles Of Sustainability For Food Products." Manufacturing.net, Aug 20th, 2010
[9] World Resources Institute, REDUCING FOOD LOSS AND WASTE: Setting a Global Action Agenda. 2019
[10] "Sustainable Agriculture." National Geographic

LEARN MORE

Follow us:

641 Avenue of the Americas, New York, NY 10011

INF-2532017-en-US-0922-4