

Waste no effort

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Food waste is a pervasive global issue with severe environmental, social, and economic consequences. At each stage of the supply chain, from production and processing to distribution and retail, substantial amounts of food are lost or wasted. The detrimental impact of this waste extends beyond the loss of valuable resources to the emission of greenhouse gases and food insecurity.

However, with technological advancements and the adoption of innovative solutions like modern supply chain planning software, there is enormous potential to reduce food waste effectively. In this article, we will explore the magnitude of food waste in different parts of the supply chain and highlight how advanced planning software can be instrumental in combating this issue.

The where's & when's of food waste – and its environmental impact

Food waste occurs at various supply chain stages, leading to significant losses globally. According to the Food and Agriculture Organization (FAO) of the United Nations, approximately one-third of all food produced for human consumption is wasted, about 1.3 billion tonnes annually.

Factors such as adverse weather conditions, pests, and inadequate storage facilities contribute to crop losses, ranging from 20% to 40% in certain regions.

Inefficiencies and suboptimal processing and manufacturing practices can result in significant waste. Trimmings, by-products, and imperfectly shaped or sized produce often go unused and are discarded, contributing to overall waste.

Food loss continues to accumulate during distribution and retail operations. Inefficient

inventory management, inaccurate demand forecasting, and suboptimal shelf rotation practices lead to expired products, unsold items, and overstocked shelves.

Significant food waste occurs due to improper storage, over-purchasing, and confusion over date labelling. Consumers often discard perfectly edible food, contributing to the overall loss generated throughout the supply chain.

Food waste generates substantial greenhouse gas emissions (GHG-E) and contributes to climate change. When food decomposes in landfills, it produces methane, a potent greenhouse gas. The FAO estimates that food waste accounts for approximately 8% of global GHG-E. We can effectively mitigate these emissions and their environmental impact by reducing food waste.

The hows of preventing food waste

Supply chain planning plays a vital role in combating food waste. By harnessing the power of data analytics, machine learning, and optimisation algorithms, advanced planning software such as RELEX empowers businesses to make informed decisions, minimise inefficiencies, and reduce waste.

Our solution utilises advanced analytics to break down historical sales data, market trends, and external factors to generate precise demand forecasts for each product in every

storage location. By optimising the planning process on accurate and granular demand insights, businesses can avoid overproduction, reduce stock-outs, and minimise waste.

RELEX employs sophisticated algorithms to optimise inventory levels based on demand forecasts, lead times, and service level targets. By ensuring optimal stock levels, businesses can minimise waste while meeting customer demand effectively.

We have also incorporated shelf life considerations into the planning process, enabling businesses to prioritise inventory based on expiration dates. This helps prevent outdated products from reaching store shelves, ensuring that the freshest goods are available to customers and reducing waste.

Optimising transportation and delivery routes is vital for minimising food waste in the supply chain. Advanced planning software like ours considers various factors, such as delivery windows and vehicle capacities, to plan optimised logistics operations. By optimising vehicle utilisation, businesses can minimise the risk of spoilage and reduce unnecessary emissions.

Effective collaboration and communication among stakeholders in the supply chain are also crucial for waste reduction. Advanced planning software provides a centralised platform that enables information sharing, collaborative planning, and efficient



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communication. Businesses can streamline operations, prevent wasteful practices, and improve overall efficiency by fostering collaboration between suppliers, producers, distributors, and retailers. The same goes for communication within companies – by having unified processes between departments with potentially conflicting interests and KPIs, such as supply chain and merchandising, waste can be reduced.

Adopting advanced planning software to reduce food waste has significant environmental benefits. By minimising food loss throughout the supply chain, we can reduce the resources, energy, and water used in producing, transporting, and disposing of wasted food. Moreover, as food waste contributes to GHG-E, such as methane from landfills, reducing waste mitigates these emissions and their impact on climate change directly.

Effectively addressing food waste requires collaborative efforts and industry-wide adoption of advanced planning software solutions. Governments, industry associations, and organisations can play a pivotal role in promoting the adoption of such technologies, providing incentives, and facilitating knowledge-sharing among stakeholders. We can create a more sustainable and efficient food supply chain by working together.

Lay waste to waste

Food loss poses a significant challenge throughout the global food system.

Advanced planning software is crucial in reducing food waste across the supply chain. By effectively managing demand, optimising inventory, improving shelf-life management, and streamlining distribution & logistics, businesses can minimise waste and contribute to a more sustainable food system.

Deploying advanced planning software, coupled with collaborative efforts and industry-wide adoption, is vital to address the global challenge of food loss and build a future where waste is minimised, resources are utilised efficiently, and food security is enhanced. ■


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