
Food waste drivers: Reporting from Qatar

Global perspective on food waste

Climate change is a globally acknowledged debate in academia, but the same cannot be said for the conversation around food waste. While this debate is relatively new, it is gaining momentum and becoming increasingly important.

The statistics make grim reading. According to the Food and Agricultural Organisation, approximately one-third of the food we produce is wasted along the supply chain. This is economically and environmentally unsustainable. Understanding local, national, and international distribution nexus is pivotal to coordinating the food supply chain. The availability of infrastructures which support timely food distribution from ports to their final point of sale and consumption is critical to reducing the amount of food wasted due to operational inefficiencies.

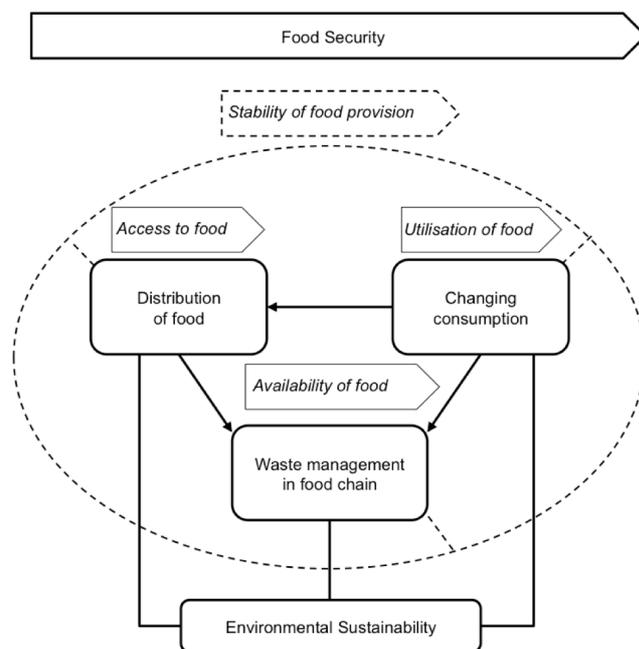
Strategic supply chain decisions span a range of activities, such as production planning, scheduling, procurement, demand management, forecasting, inventory control, demand management, and facility location. There are still, however, emerging challenges, such as designing innovative technologies for product and process traceability, coordination and cooperation in handling current food supply chain issues from both the demand and the supply ends. For the food retail industry, reducing waste not only increases profitability but also reduces the negative impact on the environment.

The global food and beverage industry is worth more than £5.6 trillion and with the global population predicted to reach 9.5 billion by 2050, food demand is expected to increase by at least 65%. In 2013, the European Union (EU) launched the campaign “Every Crumb counts” to raise awareness on the need to lower food waste through the EU (http://www.fooddrinkeurope.eu/uploads/publications_documents/Preventing_food_wast_age_in_the_food_and_drink_sector.pdf). Effective food waste minimisation strategies would mean leaner, more cost-effective operations and therefore lower depletion of food resources. Waste creation from the food industry is substantial with a significant amount of food ending in landfill. Over-production contributes to about 20-30% of material waste. The challenge for manufacturers is to be able to respond to demand fluctuations in a timely manner. When the demand is lower than expected or the production is higher than planned, the food retail employs promotions to push the excess stock down the supply chain towards the consumers. However, the food that is wasted at the consumption end is the costliest, and most environmentally problematic, since the resources have already been used to produce, store, transport, and display the food product on the shelf. The food wasted at the consumer’s hands is the highest value-added, so the most relevant to reduce. Food waste reduction is also part of the food security policies; where the aim is to make nutritious food available, accessible and usable to people on a continuous basis.

The case of food waste in Qatar

One of the wealthiest countries of the world, Qatar, suffers from food security and food waste problems. Due to scarce water resources, infertile soils and harsh climatic conditions, Qatar has severe agricultural constraints that limit the local food production to only a fraction of the demand while the country's population is rapidly growing at 4.2% year-on-year. This means the majority of the food consumed in Qatar must be imported through food supply chains stretching far beyond its borders, necessitating an unbroken flow of goods from food-exporting nations. Supply chain planning aims to support the decision-making process according to the needs of the planner and to considerably reduce food waste.

Our research project, Safeguarding Food and Environment in Qatar (SAFE-Q), examines the reasons behind food waste and seeks to promote food waste reduction as a complementary strategy to Qatar's ongoing efforts for achieving food security and environmental sustainability. Positioned within the food security framework, SAFE-Q approaches the food waste from two perspectives: supply and demand.



The SAFE-Q team of researchers conducted 64 interviews with stakeholders including operating in the food supply chain such as distributors, retailers, consumers, employees of hotels and restaurants, and employees of government and non-governmental organisations. As a result of this massive effort, the team identified 61 factors related to food waste. The full list of factors can be found on <https://blogs.commons.georgetown.edu/safeq/factors-relevant-to-food-waste/>

For example, on the supply side **Storage / Refrigeration Conditions** is a key factor contributing to food waste. Poor refrigeration and very hot weather conditions result in perishable products being spoilt much faster. Refrigeration is a problem particularly during the hottest months of the year. It is very difficult to keep the food products at a stable

temperature, due to poor refrigeration and human error (e.g. leaving the door of the refrigerated area open or leaving the product in ambient temperature which could be 40 degrees Celsius from May onwards.) Poor refrigeration results in fresh fruits and vegetables spoiling very quickly. Additionally, **Break in the Cold Chain** is significant in the context of Qatar, as it is related to weather temperature and storage. High temperature in Qatar means that food products that are temperature-sensitive need to be kept at a constant optimal temperature to maintain their quality as they are conveyed on to their final destination.

On the other hand, **Portion Size** is one factor highlighted by many stakeholders, as the size of the food served in restaurants and hotels lead to avoidable waste. Frequently, the amount of food served is much bigger than what can be consumed. Another point highlighted was related to the lack of options to choose smaller plates. So sometimes it is obvious that the food will be wasted but not possible to avoid it due to availability of smaller portions. Another Qatar-specific factor is the concept of **Open Buffets**. Open buffets are a part of the life in Qatar; frequently offered by many restaurants and enjoyed by many people living and visiting in the country. We have found that open buffets increase food waste through the people's attitude toward food. Because it is open buffet, people tend to overload their plates and do not eat everything on them. Since the cost of the food is fixed irrespective of how much is eaten, people tend to disregard the waste from unfinished plates.

SAFE-Q contributes to the implementation of the "Qatar National Vision 2030", thereby focusing on the long-term sustainability of the food supply chains and the interconnection between the four principles of economic, human, social and environmental development.