

# **Sustainability in the Food Industry**



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# **Sustainability in the Food Industry**

*EDITOR*

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# INTRODUCTION

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*Cheryl Baldwin*

The food supply chain affects every individual on the planet. As a result, sustainable development of the food supply chain is imperative. Sustainable development has been defined as meeting “the needs of the present without compromising the ability of future generations to meet their needs” (WBCSD, 2000). The food supply chain, also called the food industry or food system, includes aspects from production of the food, processing, distribution, consumer purchase, consumer use, and end of life. A sustainable food supply would then mean that food is produced and consumed in a way that supports the well-being of generations.

The current food supply has demonstrated impacts that make it unsustainable. Such impacts include overreliance on inputs for food production such as high-intensity animal production and production of produce out of season. For example, the supply chain contributes significantly to climate change, with agricultural production alone responsible for 17–32% of global greenhouse gas emissions (Bellarby et al., 2008). It has been estimated that the food system consumes close to 16% of the total energy use in the United States (Hendrickson, 1996). Food processing also constitutes 25% of all water consumption worldwide and 50–80% of all water used in industrial countries (Okos). Further, there remains widespread malnutrition, both under- and over-nutrition. As a result, the key sustainability considerations for the food supply include energy, waste, water, air, climate, biodiversity, food quality, food quantity, food price, food safety, employment, and employee welfare (Kramer and Meeusen, 2003). These issues, along with others, are discussed in detail in the chapters of this book.

The food industry has the capability to provide safe, nutritious, and flavorful foods to a range of consumers. Agricultural production can

provide a range of commodities for nourishment. The processing of commodities can provide a means to preserve foods for appropriate distribution and storage and also may reduce total waste by preparing commodities consumption. Distribution then can enable the food to reach those who need it.

The Strategy for Sustainable Farming and Food in the United Kingdom developed the following key principles for a sustainable food chain (DEFRA, 2006):

- Produce safe, healthy products in response to market demands, and ensure that all consumers have access to nutritious food and to accurate information about food products.
- Support the viability and diversity of rural and urban economies and communities.
- Enable viable livelihoods to be made from sustainable land management, both through the market and through the payments for public benefits.
- Respect and operate within the biological limits of natural resources (especially soil, water, and biodiversity).
- Achieve consistently high standards of environmental performance by reducing energy consumption, minimizing resource inputs, and using renewable energy wherever possible.
- Ensure a safe and hygienic working environment and high social welfare and training for all employees involved in the food chain.
- Achieve consistently high standards of animal health and welfare.
- Sustain the resource available for growing food and supplying other public benefits over time, except where alternative land uses are essential to meet other needs of society.

As a result, agricultural production should be focused on providing the most nutritionally dense options with the least intensity. Food processors and manufacturers need to include sustainable actions like waste reduction and recovery, composting, recycling, and processing with minimal water and energy use. Distribution should be as efficient as possible.

The benefits of sustainable practices are important for the global social and environmental benefits mentioned, but the World Business Council for Sustainable Development has also found that businesses that incorporate sustainable practices have had greater financial success

(WBCSD, 2002). Benefits of sustainable practices include lower production costs, improved product function and quality, increased market share, improved environmental performance, improved relationships with stakeholders, and lower risks.

Consumer interest in sustainable food has grown. This interest has been attributed to the desire to improve one's personal and family health and safety (Sloan, 2007). Environmental reasons have remained a secondary benefit, and in many ways unknown to consumers. For example, in a survey conducted by the Leopold Center for Sustainable Agriculture in 2007, 88% of respondents perceived local and regional food systems to be somewhat safe or very safe and had purchase preferences for such food, compared to only 12% perceiving global foods as safe (Pirog and Larson, 2007). The survey also showed that the respondents, however, did not know that airplane transport of food emitted more greenhouse gases than trucks (on a per pound basis of product transported) (Pirog and Larson, 2007).

The impacts of an unsustainable food supply on health and food safety are discussed in this book, and go well beyond the average consumers' knowledge. This indicates that as consumers learn more, their interest in sustainable food will only increase. Further, it is already evident that environmental concerns are moving higher in priority to many consumers.

This book will evaluate the sustainability of each of the main supply chain components of the food industry. There will be emphasis on environmental considerations given its significance and need for progress. Finally, the last chapter (Chapter 11) will bring the discussion from all the chapters/supply chain components together to outline sustainability principles for food and beverage products, including strategies on how to develop/innovate more sustainable products.

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