Integrating Food Science and Engineering Knowledge Into the Food Chain

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Food Ethics Education

Springer

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Chapter 3
Sustainability and Ethics Along the Food Supply Chain

Harris N. Lazarides and Athanasia M. Goula

3.1 Introduction

During the last 20 years, an alarming trend has been established; the world population is increasing much faster than our capacity to increase food production. The end result is that there is an increasing deficit in food supply, as it is shown in Fig. 3.1. It is predicted that, by 2030, the growth in global population and the impacts of climate change will increase food production needs by 50%, energy demand by 45%, and water demand by 30% (Beddington 2009).

There is a wide range of reasons for this alarming reality. These reasons include:

1. Loss of farmland due to desertification that is driven by climatic changes, soil erosion, and lack of water
2. Decreasing access to farmland due to competing uses, such as infrastructure expansions and other civilian uses, including large-scale recreation projects (i.e., "safari parks" in Tanzania)
3. Competing uses of farmland for production of oil or other nonfood products
4. Decreasing food production capacities of a given farmland due to unsustainable production, handling, and distribution techniques

Although widely recognized as a major driver of desertification, climatic changes cannot be reversed, unless worldwide actions are universally undertaken and effectively applied; nevertheless, such initiatives are rather difficult to implement, as they are expected to stumble on major application obstacles, which include strongly conflicting economic interests. On the other hand, even if the required actions were

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