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Opinion

Global Food Security Challenges and International Efforts to Tackle Them

Malik Altaf Hussain

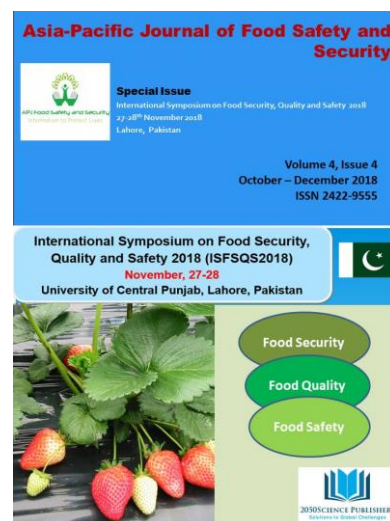
Department of Wine, Food and Molecular Biosciences, Faculty of Agriculture and Life Sciences, Lincoln, New Zealand and Executive Director, Asia-Pacific Institute of Food Professionals (APIFP)

***Corresponding author's email address:**

malikaltaf_ft@hotmail.com

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Highlights

- World population growth is putting immense pressure on existing food production systems.
- Several scientific, economic and social challenges are directly linked to global food security issue.
- Collaborative efforts by different stakeholder would be fruitful to overcome the food security challenges.

About Author

Malik A. Hussain (PhD) is an Adjunct Senior Lecturer at Lincoln University, New Zealand. He is also Executive Director of Asia-Pacific Institute of Food Professional. He is a food technologist and microbiologist. His research interests are in food safety, food security, microbiological risk assessments and microbial biotechnology.

Abstract

Global food security issue is directly linked to the prediction about expansion of world population to over 9 billion by 2050. Continuously expanding world population is putting immense pressure on resources available to produce food for human consumption. In next 30 years, estimated increase of 2 billion in human population clearly demands production and availability of more food. Many reports suggest there is a need to increase food production 40-50% to feed 9 billion people on our planet. Emerging global challenges due to food security issue are complex and diverse in nature. Scientific challenges are associated with food production, food sustainability, food waste, malnutrition and climate change. Social and economic challenges relate to food security include resource efficiency, supply chain management, urbanization, specific dietary demands, equity in wealth distribution and poverty alleviation. Product price versus safety, quality, variety and demand are the key challenges faced by global food industry in the context of food security. Internationally, food security is recognized as one of the priority food policy development area. Government agencies in different countries are developing policies and setting up priorities to strengthen food systems for sustainable food supply. NGOs and non-profit organizations are active to highlight the issues and establish collaborations to effectively address the challenges. Academic and research institutes are playing a vital role to produce expertise in the key areas and creating a strong knowledge base to tackle the issue in coordinated manner. This article provides an overview of global food security challenges and recent efforts to address them.

Keywords: Food security; food systems; food demand; food supply; food policy

Introduction

Global food security could be achieved by securing enough, nutritious, and safe food for every individual dwelling on our planet. Constantly growing world population requires global food production to increase by 60% to feed more than 9 billion people in 2050. The United Nations is promoting sustainable agriculture and has set targets for ending hunger, achieving food security and improved nutrition in 17 Sustainable Development Goals (SDGs) for the year 2030. However, the current model of continually population growth relying on finite resources is clearly not sustainable. Therefore, world needs to overcome several challenges to address food insecurity issue effectively.

The key food security challenges to consider include rising population, slow irrigation, falling water table, climate change, rising incomes and changing diets, yields and productivity of agriculture crops, food prices, supply chain management, food loss, food waste, wealth distribution, urbanization, poverty and so on. Food loss and wastage is identified as one of the major challenges, some investigations indicate that anywhere between 30 and 50% of food produced is never consumed and inevitably goes to waste (Gunders, 2012). For example, food wastage could have serious financial and environmental impact. According to Food and Agriculture Or-

ganisation (FAO), food wastage costs USD 1 trillion each year (FAO, 2013). This article highlights diversity of food security challenges and global efforts to address these challenges.

Diversity of food security challenges

Emerging global challenges due to food security issue are complex and diverse ranging from scientific to social challenges. Figure 1 provides an overview of food security challenges and some of them are discussed briefly in this section.

Global food security requires to resolve a wide range of scientific and technical challenges related to food production, food sustainability, food loss and wastage, malnutrition and climate change. In recent years, food loss and food waste gained a lot of attention and several reports discussed their impact on food security (Global Food Security Index, 2014). Food loss occurs mainly during the production, post-harvest and processing stages whereas food waste occurs during the distribution and consumption stages. Estimates suggest more than one third of the current food production is lost or wasted in the food supply chain.

Economic challenges of food security are posed by resource efficiency, food prices, supply chain management, and trade barrier. Fluctuation in global food prices is a key economic challenge faced by global food industry in the context of food security. Unstable food prices are triggered by events such as political instability, climate change and fuel shortages that have made the challenge of achieving global food security more complex. This clearly indicates that food security is a multi-layer concept determined by several dimensions; food availability, food access (includes physical and economical access to food), food utilization and food stability.

Social challenges of population growth, urbanization, specific dietary demands, equity in wealth distribution and poverty alleviation are affecting global food insecurity and will affect more seriously in coming years (McCarthy et al. 2018). Most of the expected world population growth (9 billion or more by 2050) will occur in the poor communities with lower income of the developing nations. Traditionally these people have faced more significant food security issues than developed countries. Moreover, this population growth would further increase the ongoing trend of urbanization and it is expected that more than 65% of the population will be living in urban areas by 2050. Then, these densely populated societies are going to put an immense pressure on food supply chains. Furthermore, other social issues like specific dietary demands, equity in wealth distribution and poverty alleviation will cause shortage of food supply to specific segments of the society.

International efforts to overcome food security challenges

Internationally agencies such as FAO has taken several initiatives and recognised global food security as one of the priority food policy development area. In 2030 Agenda for Sustainable Development, FAO proposes a global campaign to eradicate poverty and end hunger within 15 years (<http://www.fao.org/food-security-and-nutrition-for-all/en/>). FAO as a policy and

knowledge organization is playing an active role to help countries eliminate hunger, food insecurity and malnutrition.

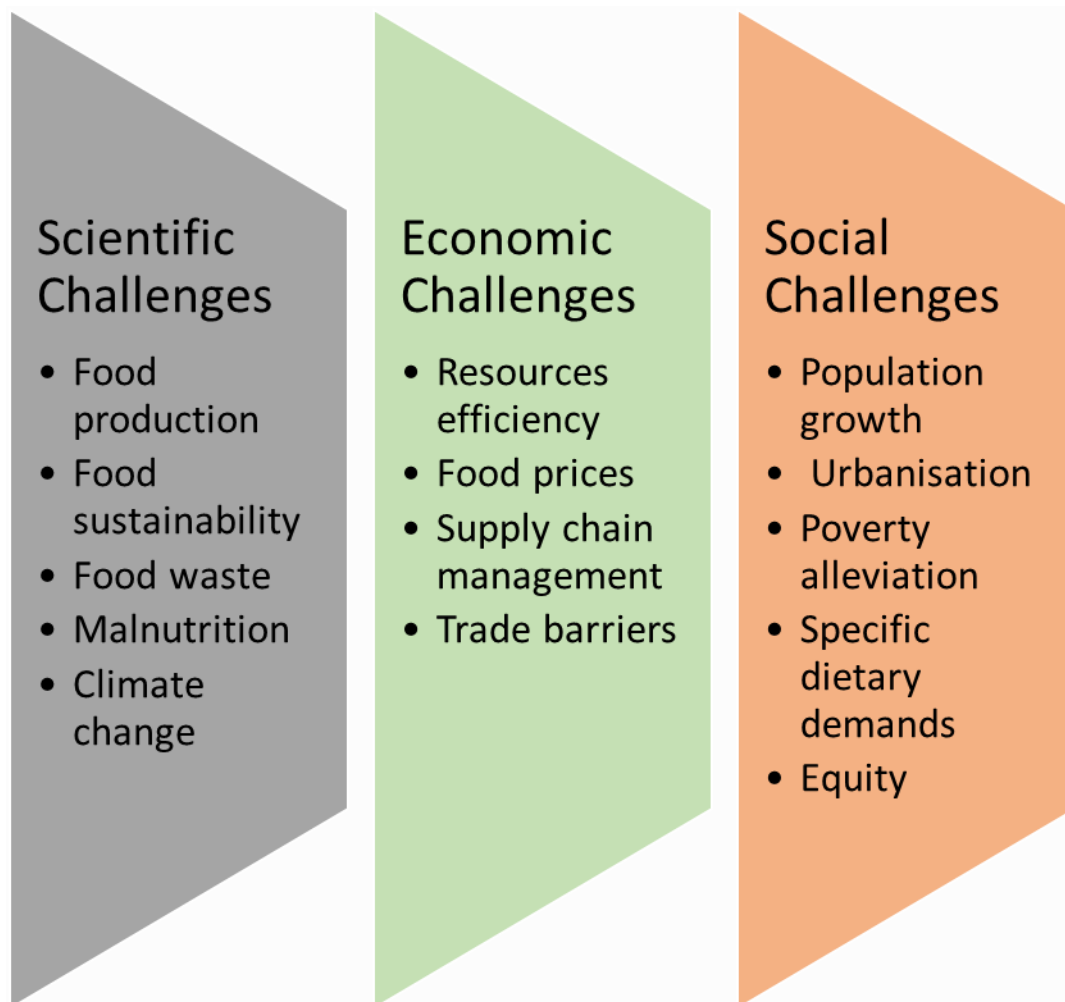


Figure 1. An overview of key scientific, economic and social challenges in food security.

During last decade, emphasis on agriculture and food security could be noted through a mix of global, regional and bilateral initiatives. Many nations have developed food security policies by setting up priorities and designed food security programs to strengthen food systems for sustainable supply chain. Several NGOs and non-profit organizations, academic and research institutes and professional associations are also playing an active role in a wide range of activities to solve different challenges of global food security. However, coordinated and collaborative efforts by different stakeholder would be more impacting in overcoming the food security challenges.

Concluding remarks

- Continuously expanding world population is putting immense pressure on resources available to produce food for human consumption.

- Emerging global food security challenges are scientific, economic and social in nature.
- A coordinated response could have more impact than fragmented efforts by different agencies, organisations, institutes and associations.

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