Chapter 50
A Review on Impact of Changing Climate on Sustainable Food Consumption

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ABSTRACT

Food security is of great importance in the politics of sustainable consumption and production (SCP) because of its implication on environment and people. The changing climate is adding to world resource problems such as food security, water scarcity, pollution, soil degradation, etc. Greenhouse gas (GHG) emissions and land use demand by agriculture has continued to influence what people quantity and quality of available food. This review used resources from all relevant literatures to examine impact of changing climate on sustainable food consumption by identifying effect of changing climate on nutrition, food production, and food consumption, and provides recommendations on sustainable food consumption measures. The review is of the opinion that food consumption patterns are changing in the face of population growth, economic development, and environmental challenges. Such shifts place increased pressure on already depleted natural resources due to the resource-intensive production and transportation requirements of these products.

INTRODUCTION

Feeding a global population of nine to ten billion people by 2050 presents an enormous challenge and at the same time humanity is facing a variety of serious sustainability challenges. On the environmental side, it is global warming and resource scarcity, on the social side, it is increasing inequity. At the same time, focus on growth, innovations and technological solutions builds a locked-in situation in a system, hindering an effective targeting of these challenges if not contributing to them. Outside the effects on humans, further stress is placed on the ecosphere and biodiversity (FAO, 2012; IPCC, 2012).

DOI: 10.4018/978-1-7998-5354-1.ch050

Food security is a major issue in the politics of sustainable food consumption and production (SCP) because of its impact on the environment, health of the people and the economy. Several key issues high on policy development agendas worldwide show how far-reaching the problem is. Serious environmental challenges associated with food production and consumption include water scarcity, soil abjection, eutrophication of water bodies, climate change, water pollution, and loss of habitats and biodiversity. Food consumption is responsible for most of the global water use as well as for generation of about one fifth of greenhouse-gas emissions (GHGs) (Bazilian et al., 2011).

Latest efforts by international and national policy makers have sought to urge individuals to engage in several ranges of environmental friendly practices to address both discrete environmental problems and global challenges of great importance such as climate change (Hanss & Böhm, 2012). The concept sustainable consumption was first coined in Oslo in 1994 in line with the Brundtland commission definition of "sustainable development" and includes both consumption and production. It was seen as the use of goods and services to meet basic needs and improve quality of life, while reducing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, in order to meet the needs of the present and future generations (Brundtland Commission, 1987). Similarly, sustainable consumption has attracted attention under the headline of Sustainable Consumption and Production (SCP). It received support with respect to implementation at the World Summit of Sustainable Development held in Johannesburg in 2002 where each participating countries pledged themselves to promoting SCP, with developed countries taking the lead (Gerbens-Leenes et al., 2010; Fuchs & Lorek 2005).

Over the years, the importance of sustainable food consumption policies has been increasingly expressed at international policy level. In 1992, Rio Declaration on Environment and Development calls upon States to reduce and eliminate unsustainable patterns of production and consumption in order to achieve sustainable development and a higher quality of life. There is also Agenda 21 with its chapter 4 on sustainable consumption and production. Similarly, in 1999, UN Guidelines for Consumer Protection gives governments a comprehensive framework for policy setting for more sustainable consumption and production. And in 2002, at the World Summit on Sustainable Development in Johannesburg, the summit called for development of a 10-year plan to speed-up the move towards sustainable consumption and production patterns (Fuchs & Lorek 2002; Lorek, Spangenberg & Oman 2008).

Gerbans-Leenes & Nonhebel, (2002); Schafer, Herde & Kropp (2007) have examined the environmental impact of different food consumption patterns in terms of energy and land use. Results demonstrated higher use of energy for food of animal origin, processed food and greenhouse cultivations, compared with plant food, fresh products and open-air cultivations. Accordingly, diets rich in meat consumption were found to consume energy and devour lands (Gerbans-Leenes & Nonhebel, 2002). Schafer, Herde & Kropp (2007) stated that present food consumption patterns are unsustainable, as they endanger not only the carrying capacity of the earth, but human health as well. Food production and consumption is increasing the rate at which natural resources such as water and energy are depleted. Chemical materials such as pesticides and fertilizers are also overused in the process (WHO, 2004).

Climate change is one of the most challenging threats facing the world (UNFCCC, 2007). Most notable consequences include shortfall in rainfall, droughts, high temperature, flooding and unpredicted weather. Developing countries are usually the most vulnerable because their economies as it is more dependent on climate sensitive natural resources making them less able to deal with the impacts of climate change (UNFCCC, 2007). This creates a vicious circle, as malnourished population is less resistant to the effects of climate change, such as the spread of diseases. Climate change is equally expected to negatively af-