

Global Food System and Importance of Sustainable Food City

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Abstract

Research estimates that the use of natural resources is thirty percent more than the earth can replenish and that the population will have consumed 3 planets worth by the year 2050. This overconsumption of natural resources leads to visible effects such as climate change, ecosystem degradation and unsustainable food systems. To reverse this negative trend, cities are trying to establish sustainable food systems by working jointly in various aspects and projects related to food and ecosystem sustainability. A pioneering country, the United Kingdom, with a network of about 36 cities working in harmony, has various projects that aim in attaining this vision. This paper is focusing above these issues.

Keywords: Sustainable Food City; Food Security; Consumption Pattern; Food System

Abbreviations

GHG: Green House Gas; NGO: Non-Government Organization; SFC: Sustainable Food City

Introduction

Food is a basic human need. Foods supply nutrients, which is a prerequisite for healthy life and living. In the last 50 years society has witnesses a change in the way food is grown and produced. New technologies made it possible to produce in a more efficient way; intensive systems have emerged on the land through e.g. hybrid plant breeding or intensive livestock rearing. Food is no longer sourced locally or nationally but rather internationally [1]. In developing countries, hunger and malnutrition are common place as the cities grow, making food security a major issue [2]. Recently, more than half of the population around the globe lives in cities and this proportion continues to grow [3]. By understanding the problems of today's unsustainable food system and having a successful example set by the UK's Sustainable Food City Network, transferring these gained insights was the fundamental task to be accomplished. The objective of this paper is describing of the negative trends of the current unsustainable food system and how to transform the UK's concept of Sustainable Food City to other countries in the world.

Case Report

How to transform Sustainable Food City (SFC) in the world and alleviate some of the negative trends of the current unsustainable food system and how to implement the United Kingdom (UK)'s concept called "Sustainable Food City Network" to other countries.

Discussion

Today's unsustainable food system

The consequences of the current food system, meaning how food is produced, processed, distributed, accessed, consumed and disposed (illustrated in figure 1), are diverse [1].

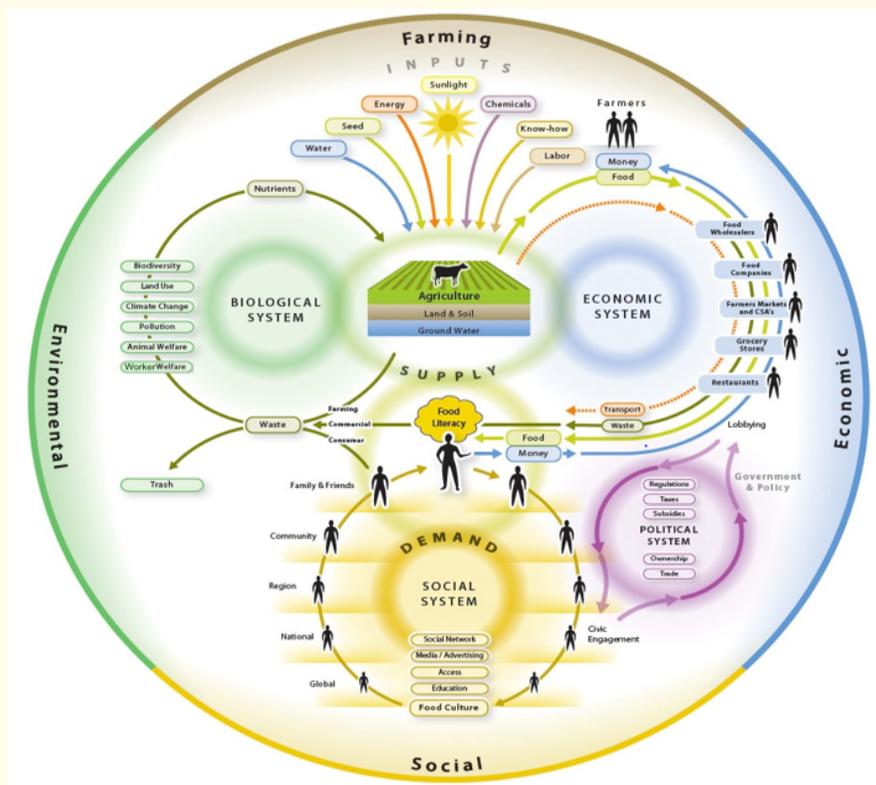


Figure 1: Illustration of the interconnections of the food system (adopted from Nickel-Kailing, 2012).

These can be seen for example in the fact, that the current global food system accounts for around one third of the total greenhouse gas (GHG) emissions and that synthetic fertilizers are being produced in an energy-intensive way and leaching of phosphorus and nitrogen contribute significantly to water pollution. Furthermore the agricultural sector is excessively using and exploiting the earth's fresh water resources and undermines the ability, that we can grow enough food now but also in the future. Adverse health effects such as pesticide-related illness are affecting especially disadvantaged people in the society. Despite the rise of conventional agriculture, millions of agricultural workers earn low wages (even lower than what is required to subsist) and around 870 million people were chronically undernourished in 2010 - 2012 [2,5]. The current food system struggles to face the challenge of food insecurity on the one hand but struggles at the same time to face overconsumption, obesity and other diet-related ill-health on the other hand while losing or wasting approximately one third of edible food [6].

- 805 million people suffer from chronic hunger [7]
- 3.4 million people die each year due to overweight and obesity [7]
- 70% of water use is linked to food production [8]
- 75% of the world's food is generated from only 12 plants and five animal species [9]
- Food waste by consumers is 95 - 115 kg a year in Europe and North America [10]

Table 1: Some facts about the current food system.

According to the UN Johannesburg Summit in 2002, sustainable development calls for improving the quality of life for all of the world's people without increasing the use of natural resources beyond the earth's carrying capacity. The definition which was proposed by the Oslo Symposium on Sustainable Consumption (1994) defined sustainable consumption as "the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations." Having this definition in mind it is undeniable, that the current food system cannot be called sustainable at all. Not surprisingly concerns were raised and sustainability has more and more moved up the political agenda due to the current unsustainable food system.

Importance of Cities

Human society has witnessed an unprecedented growth of cities however without considering and managing the problems linked to this growth. "Their underestimated and mismanaged growth seeded many of the problems that we wrestle with today: climate change, transnational crime, political instability, terrorism, epidemic disease, supply chain breakdowns, congestion, and riots" [11]. It has been shown, cities are highly related to many problems the world is facing today and are finding themselves being faced with problems such as diet related illness, threatened biodiversity, water scarcity and food insecurity. In particularly in developing countries, hunger, malnutrition and unemployment are commonplace as the cities grow, making food security a major issue [2].

Currently, and for the first time ever, more than half of the population around the globe lives in cities and this proportion continues to grow [3]. A hundred years ago, 20% of the total world's population lived in an urban area. In 1990 less than 40% of the world's population lived in cities and the UN predicts that, at current rates, by 2030, 60%, and by 2050 even 70% of the global population will live in a city (see figure 2). Urbanizing, referring to the demographic transition from rural to urban, is taking place at a rate never seen before and as the population in urban areas grows, the cities grow. Not only does this cause shifts from an economy, which was agriculture based, to mass industry and technology but this also creates an outward expansion, often subduing the natural environment, consuming the planet's resources from well beyond their defined limits and destroying ecosystems [13,14].

This becomes important when considering that although urban areas cover less than 3% of the globe's terrestrial surface, they are serving as leading contributors of greenhouse gas emission with 78% of all carbon emission and moreover 60% of residential water use have been assigned to cities [14,15]. Inhabitants of urban areas affect the ecosystem with rising consumption level with relentless imports of food and exports of arising wastes to distant areas and engrossing ecosystem support, that can sometimes be 500 - 1000 times larger than their own area [13,14].

Seeing it from another point of view, cities also are also places of opportunities of sustainable development, places, where most of the global population lives, which are dynamic, innovative, divers and well equipped to change the unsustainable food system and have a positive impact [16]. To put in the words of the European Commission: "Cities are key to the sustainable development of the European Union" [17].

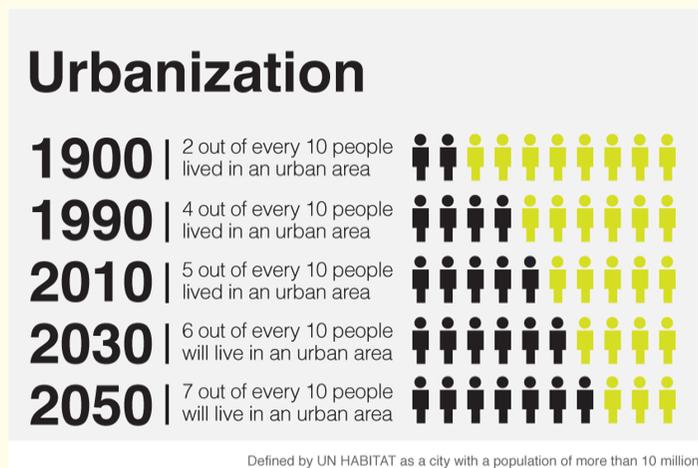


Figure 2: An example of a kahoot summative evaluation after all subjects have answered.

Since food is connected to the local context as the consequences of an unsustainable food system can be seen among others in the well-being, health issues, environmental impacts, cultural erosion, and land-use, conservation of the local ecosystem and economic development or the infrastructure and transport of a city - cities contain an enormous potential to reverse these trends [18]. Through this connection food can be used as a tool to move towards sustainability and integrate the social, environmental and economic dimensions of sustainability. The fact that food plays a key role in alleviating some of today's most pressing environmental, social and economic challenges has been more and more recognised across the world and people have understood the necessity of transforming their food culture and food system [19]. As stated by the Soil Association: "From obesity and diet-related ill-health to food poverty and waste, climate change and biodiversity loss to declining prosperity and social dislocation, food is not only at the heart of some of our greatest problems, but also a vital part of the solution" [19]. A successful example to alleviate some of the negative trends was set in the United Kingdom with their "Sustainable Food City Network".

United Kingdom's Sustainable Food City Network

The United Kingdom has pioneered successfully to alleviate some of the negative trends of the current unsustainable food system through a program called "Sustainable Food City Network". In its nutshell the network is an alliance of local communities, private sector, local authority and other organizations working closely together in order to transform their food system into a more sustainable food system. Therefore public, private, voluntary and community organizations collaborate in developing and delivering an action plan that turns their vision into reality and making healthy and sustainable food a defining characteristic of where they live [20,21].

In 2011 the Sustainable Food City Network evolved from an event at which representatives from 20 UK cities and 15 Non-governmental organizations met to share their knowledge and experiences they have had in developing healthy and sustainable food programmes throughout different cities. The members of the network have recognized that food and diets are a powerful tool for positive developments and want to propagate sustainable food for the benefit of people and the environment. The network is led by three big NGOs: Soil Association, Food Matters and Sustain and is funded by Esmee Fairbairn Foundation and shall help people and places to share challenges, explore practical solutions and develop best practice in all aspects of sustainable food within a community. Today 35 cities have already joined the network [22]. The network aims on the improvement of the current unsustainable food system within a city or a community.

Therefore it shall enhance the communication between people, communities, towns and cities so that they share their knowledge and challenges, explore solutions and “develop best practices in all aspects of sustainable food production, procurement and consumption” [23]. The Sustainable Food Cities Network has established an internet platform where one can find introductory guides, guidance on how to set up a good food policy, examples of action plans and strategies and programmes, so that especially local authorities can get information on how to get started and what they should consider if they want to transform their city. All information is accessible for everyone how to turn the vision of a more sustainable food city into reality. However, to get started they suggest “essential elements” and “key issues” on what one could start with, which will be briefly mentioned in what follows.

Essential elements and key issues of a Sustainable Food City

There is no clear definition of the term “Sustainable Food City”. On the official website of the Sustainable Food City Network it says: “Sustainability is a very broad concept and is about direction of travel rather than reaching a specific destination, so no one definition is ever perfect” [24]. In order to get public, voluntary, private and community organizations to collaborate in developing and delivering an action plan for making healthy and sustainable food a defining characteristic of where they live, it is suggested, that local authorities, for a successful city-wide programme, have to consider three major elements, which they call the three P’s-partnership, policy and action plan [25].

Partnership: This refers to the establishment of an effective cross-sector food governance body, which should navigate and shape the whole process of transformation. In order to establish a successful, city-wide sustainable food programme, key stakeholders who are willing to collaborate for positive change have to be brought together. For steering the process into the right direction, a vision has to be created for what one wants to achieve in the city.

Policy: The joint vision of healthy and sustainable food needs to be incorporated into all relevant policies of the city. Significant improvements can only be made if food is put at the heart of policy [25].

Action Plan: The joint vision has to be turned into reality through an achievable strategy and an action plan by working together with all partners in order to create an integrated and city-wide programme. Through this food action plan food shall be made more of a priority in the city to be able to perform its full potential in driving positive economic, environmental and social change [25].

In the process of developing their programmes many of the involved cities have found it useful to highlight six areas, which will be referred to as key issues. These overarching aims are giving guidance in how to turn the city into a Sustainable Food City although the fact how it will be established will depend on the circumstances and opportunities in each city [26]. Those six key issues shall give guidance to the cities how they can implement a more sustainable behaviour across the city:

1. Promoting healthy and sustainable food to the public.
2. Tackling food poverty, diet-related ill-health and access to affordable healthy food.
3. Building community food knowledge, skills, resources and projects.
4. Promoting a vibrant and diverse sustainable food economy.
5. Transforming catering and food procurement.
6. Reducing waste and ecological footprint of the food system.

Following these aims the food system can be turned into more sustainable which will lead to an enhancement of environmental, economic and social health of a city, shortly spoken a Sustainable Food City [27].

Transferring the UK's concept to other countries

It is known that Sustainable Food City was defined as a city or village in which food plays an important role in tackling social, economic and environmental challenges and contributes positively to the wellbeing of ourselves, the society and our planet.

In its nutshell, Sustainable Food City shall connect all relevant stakeholders and enhance communication, raise awareness among all citizens about a sustainable food system, offer practical tools and opportunities to contribute and make sustainable food a characteristic of the city, including everybody. It aims at reducing negative trends of the current unsustainable food system by embedding all on-going projects and initiatives that support this idea, local authorities and citizens into a network structure with a clear vision. It tries to inspire people in and outside of the city but also other cities around the world to work towards a more sustainable food system, and to share their knowledge and experience.

Conclusion

Sustainable Food City plays an important role and it is deal with social, economic and environmental challenges and contributes positively to the wellbeing of the society and our globe as well. Recently, people are realizing that today's unsustainable food system is a great threat for the world and to overcome this problem United Kingdom set a successful example for transform Sustainable Food City Network. Sustainable Food Cities' aims to reverse this negative trend, cities are trying to establish sustainable food systems by working jointly in several aspects and projects related to food and ecosystem sustainability. UK's Sustainable Food Cities try to boost people work towards a more sustainable food system and to share their knowledge and experience.

Conflict of Interest

There is no conflict of interest.

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