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The Global Economy: Food Security

Luis Kluwe Aguiar

Introduction

The issue of food security has been one which has taken a prominent position on the world stage. Food security has been defined variously, but is seen by the United Nations committee to be concerned with the condition of people and their need to have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. This chapter puts forward the question as to what is the right action to take in order to deliver food security, given the predicted growth in global populations, changing consumption patterns and increased food wastage. Solutions up until recently have been predominantly driven by the economic constructs, but could the solution be more utilitarian to deliver the greatest good to the greatest number of people?

The chapter explores the current paradoxes and problems faced both in developed and developing countries in the delivery of sufficient safe and nutritious food. One key paradox is that whilst there is sufficient food globally to feed current populations, in both developing and developed countries there are haves and have-nots, there are the over-nourished and the under-nourished, and this is potentially a function of the present political economy of food. Current political economies, although built upon welfare economics, are failing or avoiding effective compensation of the losers, whilst the winners are more than adequately rewarded. Growing affluence amongst certain fractions results in higher consumption of meats, dairy products and added value highly processed meals, whilst poverty has led to food insecurity and social dislocation with the poor pushed out of the mainstream of society. Land availability offers further challenges for food security. With the increased demand for meat, more land is required both for the

production of sufficient meat to feed the total population, and the production of sufficient animal feed; a factor which will heighten the gap between the haves and have-nots. The position is exacerbated where there are conflicting demands on land for alternative renewable fuels.

The management of food security needs to be carefully considered along with our systems of food delivery, the dominant political economic frameworks, consumer consumption trends and demands, and the shift towards a drive for the re-localisation of electorate experience and identity. The determination of these to effectively deliver global food security will require considerable deliberation and innovative thought.

Global shifts in the consumption of food

The food and drink culture we experience today is totally different from that prior to World War II. Millstone and Lang (2003) highlighted in the *Atlas of Food* the interconnectivity of internationalised supply chains, which enabled most consumers to have continual access to food. The majority of the world's consumers do not need to think where the daily bread, rice, noodles or porridge might be coming from.

The way some foods reach the plates of an entire globalised population depends on very complex links and exchanges, which also reflect a cultural shift in the role that food has taken, especially in more economically developed countries. Yet, the transformative nature of the changes of the links and exchanges has been relatively fast and encompassed the whole world. Seldom are there places where this cannot be felt, thus, the transformation of the food supply chains has affected not only societies in more developed economies but also in less economically developed societies. In the process, their food cultures have indeed been transformed. In the African, Asian and South American continents, instead of the traditional food staples, wheat has become the predominant carbohydrate consumed at breakfast, lunch and dinner. Out went the tortilla, congee, yam with honey, baked sweet potatoes and couscous, and in came the bread roll, the pasta and the sandwich. What, where and how people eat, according to Millstone and Lang (2003), is dependent upon a growing interconnectivity of international trade. International supply chains are increasingly elongated and dependent on many stages of production, where value is added. No longer is the local food system sufficient to provide consumers' needs, and increasing amounts of the food eaten today have to be imported.

In less than a century, changes in consumption have taken place, which initially were slower and more localised, but in more recent decades have intensified

and become the norm. Changes to food and drink culture have been complex (Millstone and Lang, 2003) changing the whole nature of how consumers relate to food. In Table 7.1, some of the main drivers behind cultural shifts and their consequences are summarised. As can be seen, these shifts are predominantly linked in the movement of populations from the rural towards an urban domain (UNICEF, 2015) leading to the need to transport food from the rural areas of production to urban areas.

Table 7.1: The shifts of food and drink culture. Source: adapted from Millstone and Lang (2003)

From an agrarian economy...	...to industrial capitalism	...to post capitalism
From rural dwellings to a life in villages...	...to mass urban existence
From living within the constraints of food subsistence...	... to accessing food from an expanded network	... to beyond
From eating restricted diets...	... to eating mainly seasonal diets...	...to eating unrestricted diets
From localto regional...	...to global structures

The shift from rural to urban, some argue, has had mixed results. On the one hand, more food has been produced, feeding more mouths than ever before. The foods eaten are arguably of a better quality and a more varied range, thus allowing consumers more choice. On the other hand, there is a need to intensify the use of technology throughout the food supply chain. At farm level, capital intensive machinery is used by farmers to produce food. At food processing and manufacturing level, technology is also key in the transformation of raw materials into added value branded foods. In the distribution sector, technology has facilitated the organisation of a global logistics system, not to mention the exchange of capital through payment and credit. The end result is that consumers have the chance to access a wider range of processed foods, which in comparison to consumer purchasing power are priced at an all time low. Advances in technology have enabled large scale transformations regarding the sizes of tractors and combine harvesters, the speed at which machines can churn out tonnes of potato crisps or bread rolls. Technology has also transformed the way food reaches consumers, with food retailing being accessible 24 hours a day, seven days a week.

Furthermore, advances of technology have also been transformative in households. In the kitchen, intensively processed foods are convenient for the consumers, but at the same time, more gadgets are needed to cope with ever quicker meal preparations. This is a far cry from preparing a meal over four to five hours before World War II. Now food preparation takes a matter of minutes.

Implications of technology

For consumers who can afford ready, pre-prepared and easy to cook meals this can be considered a 'consumer nirvana' or heaven, where technology has triumphed. Nonetheless, for others the gains have not been so evident. The access of highly processed foods, which are manufactured outside the home, can have a detrimental effect on the 'naturalness' of food and the dissociation of consumers from seasonality. Some argue that the dissociation of the consumer from natural cycles has had a detrimental effect on the environment by depleting from most of its non-renewable resources (soil, water, minerals and petroleum); an effect which is irreversible (Rockstrom *et al.*, 2009). The changes in consumption are seen to be very real contributors to the acceleration of the effects of climate change. Not least, as to deliver the predominant food production system there has been a need to utilise marginal land to produce food on fragile ecosystems, causing a loss of biodiversity and irreversible environmental damage.

Furthermore, despite 'superior' organoleptic qualities, excess consumption is detrimental to human health. Foods science has enabled the enhancement of products through the use of additives in the manufacturing process. Many food products depend on the use of artificial ingredients such as colourants, stabilisers, flavours and aromas, which added to the basic food ingredients, i.e. sugar, carbohydrates, fat, dairy, meat and salt, are key constituents of much of the food being purchased from supermarket shelves and fast food, popular and quick service restaurants.

However, continued consumption of these foods, which are fast to prepare and quick to eat, has resulted in the rise of healthcare costs in many economically developed economies, as a consequence of diet related diseases. Non-communicable diseases such as type 2 diabetes, cardiovascular diseases, tooth decay in pre-school children and obesity, to mention but some, are prevalent in developed countries, and are now becoming more prominent in emerging economies. The longitudinal study on lifestyle and behavioural risk factors in the USA and the works of Barry Popkin and Samara Nielsen on the ubiquitous presence of sugar on western diets, to mention some, provide small snapshots of the growing size of the problem (Popkin and Nielsen, 2003). But more alarmingly is the news from China, where part of its population, usually urban and young, are facing issues of over-nutrition.