Short Communication

A PERSPECTIVE ON GLOBAL FOOD SECURITY-WHERE FROM HERE?

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BACKGROUND

In 1974, the world food crisis prompted a focus on global food production, food stockpiles and trade. Strategies to address food security were focussed supply, and stability through reserves of food. The emphasis was on addressing food *availability* through the supply side of food security. This was underpinned by an emphasis on the level of food production, food stock levels and trade.

From the 1980s, the importance of food *access* was increasingly recognised as a key determinant of food security. Access, however, involves more than individual purchasing power. It is subject to market influences and can be achieved by means other than purchase of food. Trade, bartering, collection of wild or 'bush' foods, community support networks and donations of food are common alternative means of securing access to food.

Concerns over access to adequate food redirected focus to policy level changes that impact on incomes and expenditure. This move brought the food security discussion closer to the poverty agenda. An adequate supply of food at a national level, however, does not necessarily guarantee household level food security. The Food and Agriculture organisation (FAO) identified the need to address food security at a household level, and the World Health Organisation (WHO) considers that there are clear links between household level food security and health (World Health Organisation, 2009). Since the 1990s the concept of food *utilisation* has also entered the discussions surrounding food security (FAO-Food Security Information for Action, 2009).

Recent awareness of global environment, climate change and trade liberalisation has focussed attention on broad scale issues of food security. In fact, food systems and food security can be analysed on a large or small scale, from global, national and regional levels to household and individual levels (British Cabinet Office Strategy Unit, 2008). Food systems occur at multiple levels and the levels are linked with each other. Increasingly, food system problems at a global or national level affect people at individual and household level.

Significant recent global changes in food systems comprise changes in food production, with larger-scale and intensive approaches, increases in 'value-added' activities in food processing and packaging, and more concentrated distribution and retail networks resulting in long distance food travels (The food mile- Cribb 2010). While they are subject to global factors, local food systems nevertheless vary; the myriad of food supply and access factors interact in different ways that are context-specific (British Cabinet Office Strategy Unit, 2008).

Thus, food systems may also operate inequitably, creating wide variations in food availability, access and utilisation, which can lead to problems of food insecurity at national, regional, household or individual levels.

WHAT IS FOOD SECURITY?

Food security is a multidimensional concept. The Rome Declaration (1996) definition of food security has been formally endorsed at a global level.

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." (FAO-Rome Declaration, 1996)

The food security of any group of people is an outcome of food systems and can be experienced at a national, community, household or individual level. The connection between food security and food systems is reflected by FAO, who describes four main dimensions of food security (FAO-Food Security Information for Action, 2009).

1. Physical *availability* of food
2. Economic and physical *access* to food
3. Food *utilisation*
4. *Stability* of the other three dimensions

In most cases the focus of programs to address food insecurity is often placed on strategies that address only one of these dimensions.

Food Availability (supply) is the physical presence of sufficient choice and quantity of nutritious foods to meet consumer needs at competitive prices. Adequacy of food supply is determined by factors such as the location and accessibility of retailers and outlets, the availability of food within outlets, as well as the price, quality, variety and promotion of food (McComb et al., 2000). This is influenced by industry cost structures, store management, distribution technology, the level of competition, and consumer demand (McComb et al., 2000).

At the production level, *food availability* is underpinned by soil, water and energy security. **Soil security** has recently been defined by Johan Bauma (2012). He argues that the long-term effect of intensive farming, coupled with climate change, has resulted in soil degradation, which is affecting productivity. Furthermore, much arable land is lost to roads, rails and housing due to increasing human population. Human encroachment on agricultural land is another factor impacting upon soil security. **Water security** is another important dimension to *food availability*. In Australia, the issue of water security has been under the spotlight for quite some time (Commonwealth of Australia, 2007). Industrial activities are increasing the level of carbon dioxide and other gases in the atmosphere, which has resulted in rising temperatures around the globe. The complex interaction between industrial activities, increased high temperatures and a drier environment is now indisputable (Pearce, 2007). This effect can be easily observed on a dry continent such as Australia, which is at the vanguard of climate change. The third driver of successful agriculture is energy, hence the importance of **energy security** in *food availability*. It is important not to mistaken biofuels with energy security. Use of arable agricultural land in production of biofuels *per se* is competing with use of land for food production. Energy security in agricultural food production is linked to use of chemical fertilisers, which is energy-dependent (e.g. nitrogen based fertilisers).

Food Access (demand) is the ability of consumers to acquire food that is safe, affordable, competitively priced, culturally acceptable and nutritious, by using physical or financial resources. Access depends on an individual's financial resources and total household expenditure, physical mobility and the distance and availability of transport to food stores, as well as food preferences (McComb et al., 2000).

Food Utilisation (use) refers to how people use food once they have accessed it. Utilisation includes food preparation, cooking and storage facilities, and incorporates issues of food safety. It depends on food preferences, which are influenced by eating habits and socio-cultural factors, as well as nutritional knowledge and the impact of time availability on an individual's ability to prepare healthy food.

Stability of all the abovementioned dimensions is critical to food security.

WHAT IS THE WORLD DOING ABOUT FOOD SECURITY?

The 2012 G8 Summit presented the opportunity to address head-on the ever-present and growing crisis of global food insecurity. Over one billion of the world's population suffers from chronic malnourishment and hunger; over half of these people live in rural areas and depend on agriculture for their livelihoods. The volatile commodity prices continuously threaten to plunge even more into the ranks of the hungry. This already desperate crisis is compounded by the projected surge in the global population to 9 billion by 2050. To meet the demand, global food production will need to double within the next thirty years. The consequences of food price shocks among the millions already on edge have been foreshadowed in the riots that spread across forty countries during food price spikes in 2008 (Logi et al., 2011). The recent uprisings in North Africa and the Middle East were sparked not just by political discontent, but also by the anger and frustration of vulnerable people as global food prices soared to unprecedented levels. Therefore there seems to be a relationship between volatile food markets and economic and political instability.

The urgency of the global food security crisis was recognised by the G8 who met in L'Aquila in Italy in 2009. The L'Aquila Food Security Initiative (2009) committed member nations to take all the necessary measures to achieve global food security, including mobilising $21.5 billion over three years for sustainable agricultural development. The initiative has started to reverse decades of neglect of agricultural development and stimulated new efforts- from co-financing, human capital development, institutional capacity building, and marketplace strengthening- to improved food security, especially in the least developed nations. This pledge is set to expire soon. Yet the imperative for achieving food security is no less vital. A sustained political and financial commitment by the G8, other nations, and the private sector is critical to transforming undeveloped rural areas into drivers of economic growth. Significantly greater investments in agricultural research will be needed if the agriculture and food system is to meet the demands created by a growing global population, rising incomes (affecting eating habits of the population), climate change, and resource scarcity. Furthermore technological innovation to increase food production is minimal in many parts of the world because of limited research capacity to carry out localised research. Where research can be adapted to the need of a local area its further dissemination is hampered by lack of technologies. Insufficient attention to aligning market incentives and government policy with food security and agriculture development objectives has locked hunger and poverty in place. So the challenges are massive.

FOOD SECURITY AS A HUMAN RIGHT

The concept of a right to adequate food is derived from the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966: "*the right to adequate food is realised when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement*". Under the ICESCR framework, states have a core obligation to take the necessary action to provide for a satisfactory standard of living, for example access to housing, healthcare and education, as well as an obligation to mitigate and alleviate hunger (FAO, 2004).

In 2004, the FAO Council adopted the Voluntary Guidelines to Support the Progressive Realisation of the Right to Adequate Food in the Context of National Food Security (FAO, 2004). These guidelines are not legally binding, however, they provide guidance on the implementation of existing obligations under international law and they are also intended for stakeholders working

towards the implementation of the right to food at a national level (FAO, 2004). More recently, in an effort to promote food security as a human rights obligation at a government level, the International Food Security Treaty requires signatory nations to "*respect, protect, and fulfil the right to access to food* " (2008).

UNDERSTANDING FOOD SECURITY IN RELATION TO OVERALL PATTERNS OF FOOD CONSUMPTION

A number of conceptual frameworks have been used to describe the factors contributing to and characterising food insecurity. A review of literature undertaken by Hearing and Shamsuzzoha (2009) provides details of such frameworks, which contribute to a shared understanding of the issue. Food insecurity may occur as a consequence of a specific mix of food supply/availability, access and utilisation factors. This actual mix is likely to vary between population groups and places. Other social, economic and cultural factors also have a significant influence on food access, supply and utilisation. These same sets of factors influence people's general food purchasing and consumption patterns; thus food security or insecurity can be considered as one aspect of people's overall food consumption patterns. Hence people or households who experience food insecurity may comprise a specific population subset, as a result of a particular mix of economic, social, access, supply or utilisation factors. The common factors influencing food consumption generally, and food insecurity specifically, have implications for designing interventions. Historically, the role of social, economic and political influences on people's diet and nutrition has been under-estimated, particularly in nutrition interventions. In many more affluent and advanced societies the interventions to promote healthy eating have tended to focus on improving knowledge, attitudes and skills, and therefore on individual factors related to food choices. The effectiveness of health and education, however, depends on nutritious food being readily available, accessible and utilisable.

Whilst in affluent communities, such as in Australia, educating consumers about food and nutrition is important, environmental changes can reach and influence large numbers of people and potentially lead to more sustainable health outcomes. This is based on the perception that by designing environments conducive to good nutrition, healthy choices will be easier to make (Webb and King, 2004). Public health programs aimed at improving the nutrition and eating habits of the population will be compromised if healthy food is not affordable and accessible; hence the need to focus interventions on structural policies aimed at promoting supportive environments.

In developing countries, diet quality is now considered an important contributor to food insecurity (Crowley, 1997) and in cities around the globe the urban poor are vulnerable. However, Hearing and Shamsuzzoha (2009) suggest that placing food security solely as a poverty-based issue oversimplifies the problem as many families and individuals who experience poverty maintain food security by growing their own food where possible.

ENDNOTES

There are immense challenges as the world population increases, both in terms of food security and climate security - from challenges in terms of ensuring adequate food and clean water, to guaranteeing equal access to security and justice. The eight Millennium Development Goals (2010) blueprint agreed to by the world's countries and all the world's leading development institutions is a pledge to halve extreme poverty, halt the spread of HIV/AIDS and provide universal primary education, all by the target date of 2015. This has galvanised unprecedented efforts to meet the needs of the world's poorest. Overcoming these challenges will not be easy, but the history of agriculture has proven that it is achievable. With sufficient leadership and support, underperforming land

can be transformed into life-sustaining fields and gardens resulting in isolated communities becoming local, regional, and even global food suppliers. New technologies and techniques can help preserve and restore precious natural resources to meet the needs of the world's families today and for generations to come. The incomes of the women and men farming these lands can be increased. Now is the time to renew our pledge to eliminate food insecurity and move towards a sustainable future.

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