Changing Dynamics of Food Security

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by Fatimah Mohamed Arshad

Divides in Muslim World

The World Summit on Food Security (1996), defines food security as “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”. The three pillars of food security are: affordability, availability and food quality and safety (or utilization). Unlike other commodities, food is a basic human right, besides education and freedom (UDHR Article 25(1)). More than 800 million people throughout the world, do not have enough food to meet their basic nutritional needs. Some of these countries are Muslim countries such as Sudan, Ethiopia, Bangladesh and Yemen. However, some Muslim countries, particularly oil rich countries, score good marks in terms of food security, such as, United Arab Emirates, Saudi Arabia and Kuwait (with an average of 71) (EUI, 2014). A non-oil based economy that is able to reach a relatively high score, is Malaysia (68). The highest score is achieved by the US (89.3) and the lowest is Congo (24.8). The lowest among Muslim countries is Sudan (32.7). (Figure 1)
Structurally, there is a clear divide among the Muslim countries, that is, the oil rich economies and the non-oil based economies. The rich oil countries, are characterised by oil-centric economies, with heavy dependence on food imports. With large surpluses in government coffers, these countries are comfortable in “affordability”, which allows them the “availability”, as well “quality and safe” food advantages. In short, these countries are fiscally sound to reap the benefits of food security through import. Due to the numerous conflicts that exist in the Middle East regions, there are oil rich countries that are experiencing fiscal strain, such as Syria, Iraq and Iran. Among the non-oil based economies, the countries that are seriously challenged in terms of their food security situation are, West Bank and Gaza, Sudan and Bangladesh. Clearly, economic wealth is highly correlated with food security.

However, **high income breeds “excessive” lifestyle.** It may have some bearings on “obesity”. Selected Muslim countries hold world’s high records of obesity. As shown in Figure 2, highest prevalence of obesity are observed in selected Arabic Muslim countries such as Kuwait (43%), Saudi Arabia (35%), Egypt (35%), Jordan (34%), UAE (34%) and Syria (32%). Hence, despite having a comfortable food security status, obesity prevalence may cause “food insecurity” to these countries, due to poor diet and lifestyle. The lowest prevalence of obesity, is observed in food insecure countries, such as Bangladesh, Ethiopia, Nepal, Vietnam, India, Cambodia, Niger and Chad (with an average of 2.5%).
and Yemen. While financial richness may hold the key to food security, its sustainability lies on the ability of the world, to supply a stable supply of food, which as shown in 2008, may not be so in the years to come.

**Changing Dynamics**

The dynamics of food security have changed. The landmark was made in 2008, when the world saw an unprecedented increase in food prices, causing food insecurity among the poor worldwide. The crisis ignited political upheaval and social unrest in some Muslim countries, such as Egypt, Ethiopia, Indonesia, Somalia and Yemen. Shocks are not new in the food market, but what separates the 2008 from the earlier ones, are the dynamics of it. Figure 3 indicates the continuous prevalence of shocks over time in the case of rice (1960M01-72014M04).

![Figure 3](http://muslim-science.com/changing-dynamics-food-security/)

**Figure 3:** The Monthly Price of Rice, Jan. 1960 – July 2014 (USD/tonne) Source: International Monetary Fund (2014).

Consumers worldwide have enjoyed low agricultural and food prices, in the last three decades or so, until 2008. The crisis exhibits a number of pertinent behaviours. The price trends of the major commodities such as crude oil, vegetable oils (represented by palm and soy bean oils) and cereals (rice, maize, wheat and corn), have all experienced a dramatic increase in the beginning of 2006, reaching its peak in July 2008 (Figure 4). The commodity prices are found to move in tandem with each other, as well as crude oil prices. The correlation between the commodities and crude oil prices has increased after 2007 (Figure 5). Note also the growing volatility during the crisis and beyond.

![Figure 4](http://muslim-science.com/changing-dynamics-food-security/)

**Figure 4:** Selected Commodity Prices (Jan. 1980 – July 2014) (USD/tonne) Source: IMF (2014).

![Figure 5](http://muslim-science.com/changing-dynamics-food-security/)

**Figure 5:** Correlation of Prices of Crude Oil and Food Commodities Before and After 2007.
Like any other price crisis, the fundamentals are the usual explanants of the situation. The demand was chasing the supply, which was constrained by factors such as weather problems, besides other supply determinants, such as low stock. On the demand side, globalization has brought about growth to the world’s populous countries (China and India) and other developing countries, which increased demand for food; particularly high-end products, such as meat and dairy products.

This crisis was unique in the sense, that it revealed a number of systemic factors as well as the emergence of new elements in the market. The systemic factors include: (i) The Green Revolution, which was introduced in the 1960s, has expired in that, its chemical-based input technology was damaging the soil and water, which affected efficiency and productivity. (ii) Despite a good start with Green Revolution, most developing countries have not invested enough in R&D, to improve variety as well as production technology. Investment in agriculture remains low and slow. This is proven by the fact, that the exportable surplus of rice remains very thin at 7% of the domestic production, due to low productivity.

The new elements were: (i) The emergence of demand for biofuel, which resulted in demand for agricultural feedstocks, such as crude palm oil (for bio-diesel) and corn and sugar cane (for bioethanol). All these crops are land intensive. Hence, food production is now competing with feedstock for land and water, creating “food-fuel” dilemma for resources. (ii) The commodity speculation activities in the west, has aggravated the price swings in the world market.

**Way Forward: Food First**

The Muslim world should not be complacent with hedging on oil, to “buy” food security. The future of world food supply, is challenged on many fronts particularly, climate change and resource depletion, while the world population and hence, demand for food, continues to increase. Rationalizations are needed to improve the food security situation in all countries, oil rich or poor countries alike. **There is dire need to intensify R&D, as well as investment in agriculture, to increase production in a sustainable manner.** Studies have shown that R&D in agriculture, gives the highest return to agricultural production, followed by education and roads and other amenities. In terms of poverty eradication, education yields highest return followed by R&D and infrastructural development (Table 1). Without doubt, the future of food security lies largely on R&D and innovations, particularly in producing varieties that are resistant to climate change, sustainable farming practices, post-harvest technology and preservation of resources and environment. **In short, a “greener” Green Revolution is imperative for the sustainability of food in the future.**

![Table 1: Ranking of Return of Public Expenditure on Agricultural Production and Poverty Eradication](http://muslim-science.com/changing-dynamics-food-security/)

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![Figure 5: Correlations between Commodity and Crude Oil Prices, Before and After 2007](http://muslim-science.com/changing-dynamics-food-security/)
Fatimah Mohamed Arshad is Director, Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia.

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