

Food Security

Introduction

Humanity faces the key challenge of feeding 842 million people suffering from chronic hunger; this number amounts to one in eight people globally who are food insecure. Though significant results have been achieved in the last 20 years, there is still a long way to go before eradicating hunger.

The private sector can and must play a key role to overcome the challenge of food security. Private companies must help to solve this problem not simply for moral reasons but also due to economic considerations. It is estimated that the economic cost of extreme hunger is around \$260 billion, when the required investment to overcome it according to the World Bank is around only \$10 billion per year. Food security is analyzed within the realms of affordability, availability and quality and safety of food². Within these realms there are many areas where the private sector could intervene to solve some of the major issues of food security, generating not only massive social impact, but also economic value.

To better understand the challenges of food security one must have a clear idea of who falls into the category of being food insecure. Segmenting the food insecure between farmers and non-farmers serves to isolate many of the key drivers of food insecurity. In fact, farmers makes up two-thirds of the food insecure, with the majority living in rural areas.³ The complexity of food security boils down to a simple question: why is it that producers of food are the very people who are food insecure? One must look at factors of affordability, the availability, quality and safety of food to answer this question.

Food Affordability

The volatility of global food prices is one of the major drivers of food insecurity. The food market is characterized by serious regional production imbalances, which makes international food trade necessary. The food price crisis of 2007-2008 provides an interesting

case for observing the role of commodity trading on price volatility. It seems that although several experts blamed speculation for the food price crisis in 2007-2008, the reasons were much deeper in the supply-demand balance. When observing the trends of the price curves post-crisis, it seems traders may have had less control than originally thought. International price volatility is not the only large driver of local market prices. If the cost of in- and outbound logistics is very high (or the necessary infrastructure is not existing), then the effect of international prices is negligible and they are set more by the local supply-demand balances. If there is sufficient infrastructure (and access to it), then the international market can shave the extreme volatility from the local supply-demand imbalances. Alternatively, sufficient infrastructure can also expose local markets to international price volatility.

Although many people believe that traders and speculators are synonymous, they are rather using the inefficiencies of the market to make profit from arbitrage opportunities. In order to do this, they are developing and owning more and more asset positions. Traders can be beneficial for the market by promoting more efficient operations and developing new infrastructures. On the other hand, creating a fully efficient market is not in the best interest of profit-oriented organizations.

Most of the trends today display the ongoing consolidation of the trading market, where the so-called ABCD companies are already dominating the market place. Smaller players have more chance in specific niche markets and/or with very specific (asset/supply) positions. This further demonstrates increasing control of global markets in the hands of a few players, which is a trend that can be detrimental to a given sector.

Agriculture, being a naturally cyclical industry, leads farmers to suffer from high variances in their income across seasons. Apart from the certain cyclicity of production, agriculture's dependence on stable natural environments results in the industry being evermore volatile. Shocks due to extreme weather and crop failure due to pests are two relatively uncontrollable additional risks that farmers face each day. Add to that the production challenges and market

² Definition FAO

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<http://www.ifpri.org/sites/default/files/publications/ibg.pdf>

prices that are rather opaque and controlled internationally, away from small scale farmers. Then there is the weak infrastructure across local value chains that eat away margins. All these factors mean that the struggles of the farmer become ever more apparent. Having low formal education opportunities, less opportunity for civil organization and other forms of income, farmers are not well positioned to face the countless risks that their lifestyle presents.⁴

The risks faced by farmers are many. Across the agriculture value-chain, there are production, operational, market/price, financial, technology, regulatory and infrastructure risks. Historically, the local community would work to assist neighbors to diversify against risk. If one crop failed, there were others in the community that could be tapped in a bad year. The government has also played a role in providing counter-cyclical, social and income smoothing programs. These are covered through tax revenues or foreign aid. In countries with more advanced financial services, there are insurance options available to cover farmers and other related businesses from these risks.

The availability of market-oriented insurance is very important to address food insecurity. Insurance against inclement weather and other risks related to crop failure provide a safety net for farmers, smoothing income and managing price levels. Insurance also decreases volatility and risk, which spurs investment in larger agriculture assets. Protecting agriculture investment ensures the necessary support infrastructure exists, which raises the efficiency of the food supply chain, thus enhancing food security. Developing and maintaining this infrastructure is vital to ensure the efficient use of food produced and helps farmers increase final yields and thus the availability of food.⁵

Food Availability

The Food and Agricultural Administration (FAO) defines food availability as having *"sufficient quantities of food of appropriate quality, supplied through domestic production or imports, including*

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<http://www.ifpri.org/sites/default/files/publications/ibg.pdf>

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http://media.swissre.com/documents/sigma1_2013_en.pdf

*food aid*⁶. This definition encompasses two important notions of **sufficiency** (i.e. production vs. waste) and **supply** (i.e. storage and transport) of food.

In 2009 approximately 1.3 billion tons of food were lost or wasted⁷. Food loss and waste happens in different stages of the global food business system. In developing countries most food lost / wasted appears at the consumption level (e.g. in North America about 60% of waste is happening at the consumption level), whereas in developing countries, for instance Sub-Saharan Africa, roughly 75% of food loss occurs in the production or handling and storage stages. As mentioned earlier, 842 million people are undernourished and about 70% of those live in either South and Southeast Asia or Sub-Saharan Africa. Addressing food loss means getting closer to addressing the needs of the food insecure.

Food loss is defined as *"food that spills, spoils, incurs an abnormal reduction in quality such as bruising or wilting, or otherwise gets lost before it reaches the consumer"*⁸. In contrast to this, **food waste** *"refers to food that is of good quality and fit for human consumption but that does not get consumed because it is discarded—either before or after it spoils"*⁹.

Today, different innovations and examples can be highlighted as potential remedies related to the agriculture value-chain in developing countries concerning food loss: Production, Handling and Storage, and Distribution and Selling. Given the amount of lost and wasted food, more focus should be on reducing waste instead of simply increasing production.

Reducing food loss requires resources – sometimes significant efforts have to be taken (e.g. hybrid rice varieties or investments in transportation infrastructure), but often times small steps (e.g. evaporative coolers, grain storage solutions or collection points), can make a huge difference in reducing food loss.

The benefits of food loss reduction outweigh the initial investments required. The principle

⁶ FAO presentation "FOOD AVAILABILITY AND NATURAL RESOURCE USE", Sept. 2011

⁷ FAO (2011)

⁸ FAO (2013)

⁹ FAO (2013)

aim of increasing food availability is reflected in three main levers – 1. Reduce supply volatility; 2. Increase prices; and 3. Reduce costs. The more a food security solution addresses all three of these levers, the higher its potential impact.

The overall goal is to stabilize and increase the smallholder farmers' income to afford them a higher standard of living. This is the first step in improving food availability and thus food security.

Food Quality and Safety

The third pillar of food security is *quality and safety*. Having food is not enough. Equal importance has to be given to the nutritional contents of a human being's diet and to the freshness of the food available. Health complications that arise from malnutrition account for one third of child deaths globally. Deficiency in just three of the basic elements iron, iodine and zinc are estimated to negatively impact a country's GDP by up to 3%.

Today, we can see different types of organizations and alliances that try to tackle the massive challenge of providing food quality and safety. Best practices of social business ventures such as Grameen Danone's Skokhti nutrient yogurt in Bangladesh show the role the private sector can play in addressing nutrition. Governments and international organizations are more and more willing to collaborate with the private sector and provide an environment for large-scale social ventures to take hold.

In essence improving food security and feeding the 842 million undernourished is not solved by increasing the global production of food. Instead the global community must create the right environment for smallholder farmers to operate (e.g. through insurance) and learn to utilize existing resources better. This can be achieved through a combination of small and large-scale initiatives to improve production efficiency, storage, and infrastructure. Involvement and cooperation between the public sector, private companies, NGOs, and local communities is critical to progress, and several examples document the enormous potential of such cooperation. At the same time food quality and safety plays an important part in achieving absolute food security. There are endless business opportunities for the private sector to improve the affordability, availability

and quality and safety of food, making it a vital player in the fight for increased food security globally.