

Direct Financial Impact on Farmers

The agricultural sector is a socially and economically important sector in many countries, particularly in low-income countries. In many African countries for example, the agriculture sector is a key contributor to the overall economy. In addition to being important for the balance of trade due to import and export of crops it is also a critical provider of employment. Agricultural producers, such as farmers, herders, and fishermen, are highly exposed to multiple, often systemic risks to production, including natural perils, crop and livestock diseases, and insect invasions. Brazilian farmers reported that regularly occurring risks—those occurring once every few years—resulted in an average production loss of 20-40 percent (Tüller, M, et. al. 2009). In Kenya, the overall effect of the 2008-2011 drought was estimated at \$12.1 billion, with the majority (72 percent) of the losses falling on individuals, households, or businesses that owned livestock.

Recent events, such as the 2010 drought in Russia reinforced the severe impact that large-scale natural disasters can have on agricultural production, even affecting global food prices. The damage to wheat crops in Russia was so severe that the prime minister banned exports to curtail rising domestic food prices. This in turn placed upward pressure on wheat prices abroad as Russia represented 17 percent of the global grain trade (New York Times 2010). Additionally, a summer-long drought that affected much of the United States in 2012 cost the country around \$20 billion in crop loss in that year alone (Munich Re, 2013).

Natural disasters also destroy public infrastructure and assets essential for agricultural production. The Great East Japan Earthquake, for example, destroyed 90 percent of fishing vessels (25,000 vessels in total) in the three most affected prefectures, which alone accounted for 10 percent of the country's annual production. Luckily for Japanese fishermen, insurance for fishing vessels and fisheries helped to cover the damages and loss (World Bank, unpublished working note). Most fishermen in developing countries are not so lucky; the 2004 Indian Ocean Tsunami destroyed over 111,000 fishing boats and generated over \$520 million in damages to fishermen in affected countries. The insurance industry, however, reported little to no loss in this sector (Risk Management Solutions 2005).