CHAPTER 17

Anthropological Perspectives on the Global Food Crisis

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Like other metropolitan cities in Latin America, Bogotá, Colombia, is a city of great contrasts. On one hand, new buildings are sprouting up throughout the city sporting contemporary designs and spiraling to the sky in the backdrop of the magnanimous Andes Mountains. The *Transmilenio*, a rapid transit bus system, shuttles 1.4 million "Bogotanos" along its 84 km (54 miles) of four-lane arteries throughout the expansive city, reducing travel time by nearly one-third. Meanwhile, cars and taxies clog up the streets and avenues that cross-cut the nearly 500-year-old city. Gargantuan malls, box stores, global fast food chains, and mega-supermarkets are interspersed between bodegas, bakeries, and shoe repair shops. Sustained economic growth in Colombia even during the global recession (World Fact Book 2010) has resulted in increasing economic prosperity among a growing middle class. On the other hand, poverty and hunger are ever present in Colombia's capital city where multitudes of homeless and working poor struggle to survive on a daily basis. Throughout the city homeless people abound, picking through trash for food or scrap-metal to sell or begging for money for food, and even perhaps for drugs and alcohol. They weave in and out of traffic putting life and limb at risk and sometimes resort to mugging and vandalism. In some neighborhoods graffiti is strewn throughout the run-down buildings; political statements calling for revolution and vulgar messages share public space and add color to the often bleak settings. As in many other places, there is a widening gap between rich and poor in Colombia.

While in Colombia recently, two of the authors (Himmelgreen and Romero-Daza) volunteered to help distribute food to displaced families on the outskirts of Bogotá. More than 40 years of political instability and simmering civil war have resulted in the displacement of millions of Colombians from the countryside to the cities to escape the violence of the leftist rebels, drug cartels, and the rightist paramilitaries. Even though the violence has subsided in recent years and the economy has improved, the number of internally displaced people (IDP) has grown. Actual figures vary depending on the reporting source; while the Colombian government estimates that about 3.4 million people had been displaced by 2010, a non-governmental source places those numbers at 4.9 million, with gradual increases over the years (IDMC and NRC 2010).

In addition to the civil strife, one notable factor that is fueling this continued displacement of people as of late has been *La Niña*, a climatic event in which there is a cyclical cooling of ocean surface temperatures throughout the tropical Pacific (Nature News 2010). As result, there has been a significant increase in rainfall and extended rainy season in several countries including Colombia, Venezuela, Brazil, and Australia. In Colombia, hundreds of people have died in mudslides and flooding and over 1.5 million have become homeless because of *La Niña*-related weather (Reuters 2010). Himmelgreen and Romero-Daza volunteered with the Colombian Family Welfare Institute (ICBF) and the World Food Program (WFP) to distribute rice, oil, salt, *panela* (block of brown sugar), and *Bienestarina* (a high nutritional–value cereal for infants, pregnant women, and the elderly) to families who had been displaced by recent mudslides. As in most cases, these families, who had limited resources before losing their homes in the mudslides, saw their situation deteriorate drastically because of the inclement weather. The Colombian government estimates the rates of food security (i.e., access to food of adequate quantity and quality obtained through socially acceptable means) among IDP to be about 50%. However, considerably lower figures of about 30% are reported by non-government bodies (IDMC and NRC 2010). Thus, while in the short term, this food assistance serves to protect against malnutrition, it is only a temporary fix to the much larger problem of global poverty and food insecurity.

Aims

Many neo-liberal economists and policy makers (Begovic et al. 2007, Bhagwati 2004, Sapsford and Garikipati 2006) have argued that a free-market economy will alleviate poverty worldwide. Unfortunately, this has not been the case as was evidenced by the Great Recession and Global Food Crisis (GFC) that began in 2008. The aims of this article are to discuss the GFC in the context of other recent global events, examine the causes and consequences of the GFC,

and more importantly, explore the ways in which anthropology can be used to find solutions to the pressing problem through examples of anthropological case studies and approaches.

The Great Recession and the Global Food Crisis of 2008

The global economic recession of 2008 was the worst since the Great Depression of the 1930s. Many countries including the United States were teetering on financial disaster; banks went out of business, financial markets spiraled downward like crashing airplanes, and millions of people were laid off from their jobs. It was during the early part of this Great Recession that global food prices skyrocketed and the World Food Program (WFP) declared that the increase was the biggest challenge in its 45-year history, calling the impact a "silent tsunami" that threatened to plunge millions into hunger (WFP 2008). For example, during the second quarter of 2008, the world prices for wheat and maize were three times as high as they were just five years before, and the price of rice rose five times in the same period of time. Significant price increases were found for dairy products, beef, and poultry (von Braun 2008). The United Nations Food and Agricultural Office (FAO) price index (based on changes on wholesale cost of food commodities) increased by 9% in 2006, 24% in 2007, and 51% in 2008 (Darnton-Hill and Cogill 2010). For many people, particularly those living in poverty who earn less than $2 a day and spend up to 70% of their income on food (Clemmitt 2008), these increases on the cost of food have the potential to cause much pain and suffering.

Before the current GFC, the FAO estimated that 923 million people were undernourished worldwide (FAO 2008). In 2009 it was estimated that more than one billion people were undernourished, reflecting an increase of nearly 75 million since the beginning of the GFC (FAO 2009). This is astounding considering that this represents more than 1/7th of the world's population (U.S. Census Bureau 2011).

Although the impact of the GFC is felt more strongly in poorer countries, it has also been felt in wealthier countries such as the United States. Food insecurity, which is a measure of inadequate physical, social, or economic access to food (FAO 2006), has recently risen to its highest levels since nationally representative surveys were begun in 1995. Food insecurity takes place when there is difficulty in feeding one or more household members at some point in time during the previous year. In 2007, 11.1% of households were observed to be food insecure (Nord et al. 2008). The rate increased to 14.6% in 2008 and 14.7% in 2009 (Nord et al. 2009, 2010). This translates into over 49 million people (Nord et al. 2010) or about 16% of the entire U.S. population. Seventeen million children live in food insecure households (Nord et al. 2009). Single parents, African Americans, and Hispanics are much more likely to live in food insecure households than whites. Food insecurity is not only associated with undernutrition, but also with overweight and obesity, which are more prevalent in wealthier countries.

Increasing global food insecurity and economic inflation have resulted in riots in more than 20 countries and non-violent demonstrations in at least 30 more (Messer 2009; Benson et al. 2008). This was especially so in developing countries where there is a heavy dependence on foreign food imports such as rice, wheat, corn, and soybeans. The anger and civil strife were evidenced in countries like Haiti (Mazzeo 2009) and, more recently, in Tunisia and Egypt, where rising food and fuel prices in addition to anti-government sentiment led to the ousting of the President and the fall of the entire government in the former (Ridgwell 2011) and the ousting of President Hosni Mubarak after three decades in power in the latter.

Although food prices stabilized for a period of time after the worst of the Great Recession was over, they began to climb again by the end of 2010. In fact, they hit a record high in late December 2010, according to the United Nation's FAO (CNN 2011). Fortunately, the price of some food staples such as rice has remained stable, but there is a serious concern about the rising price of wheat in the face of poor harvests in Australia where weather-related flooding has taken a dramatic toll on agriculture. Other increases in the price of sugar, oil, seeds, and meat (CNN 2011) are of concern not only in developing countries but also in industrialized ones where these commodities are extensively used in the fast-food industry and production of processed foods. Along with increased food prices there has been a significant increase in the use of food assistance programs, for instance in the United States, especially among people who are out of work or who do not earn enough money to buy food and pay for other living expenses such as housing, utilities, and prescription medications.

Causes and Consequences

In general, there has been a relative decline in global food prices since 1870 (Von Braun et al. 2008). However, there have been three major spikes in food prices over that time: the period following World War II as Europe and Japan recovered from the devastation; in the early 1970s after the Arab Oil Embargo, when oil prices skyrocketed and gas rationing was initiated; and most recently in 2008 at the beginning of the Great Recession. While the factors associated with these stratospheric increases in food prices are complex and interrelated, there are several other key ones that can be discussed in order to understand the current GFC.

Bio Fuel Production and Trade

With growing concern over the dependence on oil, there has been a push to increase the production of bio fuels in countries like the United States. As a result, American farmers have reduced the amount of land used for soybean production and have increased agricultural acreage for maize, which is used to produce ethanol (Von Braun et al. 2008). In 2006, for example, the United States diverted 20% of its

maize crop (14 million tons) for ethanol (Vidal 2007). This trend continues and has contributed to a reduction of maize and soybeans, as well as other cereals available for trade on global markets, thereby resulting in significant increases in food prices. Although people from poorer countries have been disproportionately affected by these increases, there is the potential for food prices to soar in wealthier countries, where unemployment remains high and wages are stagnant. The ability of families and individuals to be food secure will be further challenged if something is not done to reverse this trend.

Climate Change

While the public debate over climate change still rages, there is growing evidence of its impact on food systems and livelihoods (that is, the ways people support themselves and subsist). Droughts in some regions and flooding in other areas have contributed to unstable grain production; for instance, the decline in wheat production and availability of edible oils (Darnton-Hill and Cogill 2010). Dry weather in North America and in parts of Asia affected wheat production in major producers such as the United States and the Ukraine. As supplies tightened and demand grew, the cost of these food commodities increased, making it very difficult for poorer people to purchase them because their food dollars were already stretched to the limit. Crop- and specific-regions forecasts suggest that climate change will adversely impact the production of some food crops in food insecure regions around the world in the coming years (Conceição and Mendoza 2010). Also, with changing weather patterns and the encroachment of land, it is becoming increasingly difficult for nomadic peoples to raise livestock for meat and milk consumption and to use for trade for other food commodities (Clemmitt 2008).

Migration, Declines in Agricultural Support, and Global Markets

As people find it more difficult to produce enough food to meet their needs they are increasingly moving to urban centers in search of work for survival. As a result, the production of food is falling into the hands of fewer and fewer people. At the same time, agricultural multi-national companies are displacing small-scale farmers in order to meet the food demands of a growing global population and modernizing economies. These large-scale producers rely more on fertilizer and irrigation for higher yields than their small-scale counterparts. This not only pushes the price of food higher, but also poses significant environmental hazards. Moreover, as demand for meat products increase, more agricultural commodities are being diverted for animal feed, thereby further contributing to the rise in food prices (Bloem et al. 2010). Although there have been efforts to increase small-scale, sustainable agriculture, assistance for farming has been halved in developing countries between 1984 and 2004 (Mittal 2009). Finally, while the removal and reduction of trade tariffs have stimulated global economic growth in recent decades, such growth has come at the expense of the small-scale farmer who no longer can compete with these multi-national companies (Mittal 2010).

Impact of the Food Crisis on Health and Well-Being

The GFC has resulted in inadequate access to food for a great number of individuals and families all over the world. As food prices rise, and buying capacity diminishes, malnutrition becomes more and more common. Malnutrition can manifest itself as undernutrition, with the obvious signs of extreme weight-loss among children and adults and stunted or arrested growth among babies and children. However, even when there is adequate intake of calories, malnutrition can occur in the form of overweight and obesity when there is over-reliance on inexpensive foods such as pasta, white bread, rice, and other non-fortified cereal grains, and a decrease in the consumption of fruits and vegetables. While these carbohydrate-laden foods provide enough, and often excessive, amounts of calories, they tend to be void of essential minerals and vitamins. As a result, people may experience a paradoxical combination of excessive weight and inadequate nutritional status.

Inadequate nutritional status is associated with many negative health outcomes. At the most general level, there is a clear relationship between malnutrition and infection. This association, termed the malnutrition-infection cycle, was first postulated by Scrimshaw and colleagues (1968), to describe the mechanisms by which nutritional deficiencies lead to the weakening of the immune system, thus making individuals more susceptible to infectious diseases. This creates a vicious cycle, as infections further deplete the organism of needed nutrients, thus resulting in worse health outcomes. A clear example of this cyclic interaction can be seen in the context of HIV in resource-poor countries. Individuals who are malnourished are more likely to have compromised immune systems, which make them more vulnerable to HIV infection. The virus further depletes the nutritional reserves of those infected and, in the absence of adequate nutrition and medical treatment, quickly results in muscle wasting and extreme weight loss. The cycle of malnutrition and infection also hastens the progression of the disease and may lead to premature death (Suttmann et al. 1995; Tang 2003). Alarmingly, lack of access to basic food resources also increases the risk for HIV/AIDS as individuals who are food insecure and have no other means of obtaining food may involve themselves in behaviors such as transactional sex (Bryceson and Fonseca 2006, Shah et al. 2002, Weiser et al. 2007).

Malnutrition during the prenatal period may result in low-birth weight and, in severe cases, in intra-uterine growth restriction (IUGR). It can also lead to compromised immune systems and lowered immune response

among newborns. Research also indicates a possible association between nutritional deficiencies and fetal abnormalities such as spina bifida and anencephaly (Carmichel et al. 2007). Babies whose immune systems are not strong are more prone to chronic and acute infections, which lead to increase morbidity and mortality. In fact, malnutrition-related conditions such as diarrheal infection are the number one cause of death among neonates and young children around the world. Diarrheal infection, in turn, further compromises the child's nutritional status by causing a lack of appetite and anorexia, decreasing absorption of essential nutrients, and contributing to the direct loss of much needed minerals and vitamins. For pregnant women, malnutrition may result in serious depletion of stored fat, compromised immune system, and pregnancy loss.

During childhood conditions such as marasmus and kwashiorkor, both of them the result of Protein Energy Malnutrition (PEM), as well as micronutrient deficiencies, such as Vitamin A, iron, and zinc deficiencies, are especially common. During the first two years of life, when most of the brain development occurs in humans, malnutrition can have serious negative consequences for children. The actual rate of brain growth can be slowed and cognitive development may be compromised, potentially leading to long-term effects. Malnourished children may also exhibit developmental delays (both in social and motor skills), and may become lethargic and unresponsive. For older children, malnutrition may lead to anxiety, apathy, delays in the development of social skills, and difficulties in concentration, thus affecting school performance (Levitsky, David and Strupp 1995, Glewwe and King 2001, Scrimshaw 1998).

While the health and well-being of adults of all ages can be compromised by lack of access to nutritious food, elderly people are at heightened risk under conditions of food insecurity. Malnutrition may significantly decrease elderly people's physical and cognitive abilities, and may magnify the deleterious effects of other conditions such as diabetes, high blood pressure, or cardiovascular disease. Among the elderly, especially those that are home-bound or institutionalized, malnutrition can result in delays in healing of existing wounds, higher susceptibility to infections, functional decline, and delays in recovering from acute health conditions (Hajjar et al. 2004).

While the links between the Global Food Crisis, malnutrition, and compromised nutritional health are patently obvious, the GFC also has important implications for mental health. As described previously, one of the effects of the food crisis has been the increase in the number of people who are "food insecure," that is, people who do not have access to food of enough quantity and quality obtained in socially acceptable ways. The inability to obtain food for themselves and for their dependents often leads people to experience increased levels of anxiety, irritability, overall stress, depression, and social isolation (Collins 2009, Hamlin et al. 2002; Heflin et al. 2005; Whitaker et al. 2006). For example, studies in Africa demonstrated an association between food insecurity and anxiety disorder (Sorsdahl et al. 2010), and even with more serious depression (Hadley and Patil 2006). Most of these mental conditions are found among the adults (especially mothers) who face food insecurity. However, a domino effect is created as caregivers' ability to function and to relate effectively to their children is impaired. This results in increased levels of anxiety and stress among other household members. Thus, as economic conditions continue to deteriorate and more and more people experience the ravaging effects of the GFC, we are bound to see further deterioration of the physical, mental, and social health and well-being of millions and millions of individuals in all corners of the world.

Role of Anthropology in Finding Solutions to the GFC

Given the tremendous impact of the GFC on the physical, mental, social, and economic well-being of populations around the world, there has been a call to "bring clarity and understanding to the forces underlying the food crisis to enable policymakers to establish a sustainable, food secure future" (Katz 2008:4). In response to this call, we would like to touch on some of the ways that anthropologists can contribute to understanding the complexities of the global food crisis and to informing strategies to address related outcomes. One important task for anthropologists is to highlight the ways in which political and economic contexts of food insecurity and inequities are felt locally, in communities and in households, or even reflected in the body itself. Often, the descriptions of such events as the "global food crisis" report larger, global trends, without paying due attention to the ways in which such overall patterns translate into actual consequences for households and individuals. By eliciting and highlighting the lived-experience of those most drastically affected by economic and food insecurity, anthropology can contribute much to a grounded understanding of such events.

It has been noted that within anthropology, the study of nutrition—and we would argue, food security—is fundamentally a bio-cultural endeavor (Dufour 2010). Elsewhere, the authors have posited that one way anthropologists can contribute to illustrating the connections between macro level processes and individual-level experience is through the systematic assessment of nutritional status and food insecurity among individuals and households (Romero-Daza et al. 2009). Using a combination of qualitative and quantitative methodologies, such as anthropometric measurements and dietary intake surveys (e.g., food recalls and food frequency questionnaires), important information about the growth and nutritional status of children and adults can be obtained. Further, food insecurity can be measured through surveys (such as the Household Food Insecurity Access Scale [see Coates, Swindale, and Bilinsky 2007]) and in-depth interviews. This systematic assessment can provide very important insights into the different ways in which the impact of the GFC is manifested among and even within populations.

Importantly, such analyses can lead to recognition that some groups are more vulnerable to the impacts of food crises than others. Darton-Hill and Cogill (2009) point out those segments of the population already considered vulnerable, such as women, children, refugees, internally displaced populations, and minorities, often bear the brunt of food and financial crises. While this is undoubtedly true, the GFC has also brought to the fore the vulnerability of groups that had, for the most part, been considered much less susceptible to the vagaries of food scarcity. For example, Hadley and colleagues (2009) draw attention to the experiences of youth in urban and rural Ethiopia. Through the use of household questionnaires and interviews with adolescents, these researchers examined changing levels of food insecurity during the course of the food crisis, and identified predictors of vulnerability. Results showed not only that there were high levels of food insecurity among youth, but that there was an increase in such levels through the food crisis, especially among youth from the poorest households and those in rural areas. Thus, as this study suggests, anthropologists can contribute to the assessment of changes in food security levels within single populations through time, by means of carefully constructed and rigorous longitudinal research.

The fact that urban and rural households are often differentially affected by various food and financial crises has increasingly been recognized. Darton-Hill and Cogill (2009) note that while the poor are most affected and rural areas have disproportionate numbers of the impoverished, the urban poor experience the ravages of the food crisis in a somewhat different, and often more drastic, ways. Both rural and urban poor may have to purchase much of their food; however, the rural poor may in fact have more options to access food, such as the ability to produce their own foods. The impact of the food crisis on urban populations was demonstrated in a vulnerability study of households in Lesotho in 2008. It was noted that while the majority of the ultra-poor population lived in rural areas, households in urban areas were found to have the highest level of food insecurity (Lesotho Disaster Management Authority [DMA], Lesotho Vulnerability Assessment Committee [LVAC] and the UN World Food Programme [WFP] 2008). It is estimated that poor households spend between 75 percent and 80 percent of their income on food purchases alone (IRIN 2009). In urban areas 15,000 people faced a "critical food deficit," defined as the inability to meet their food needs through production, purchases or other means of acquisition (DMA, LVAC, and WFP 2008). Over half of urban households admitted to borrowing food to get by, and more than 40 percent reduced the number of meals consumed per day (DMA, LVAC, and WFP 2008). Declining maize production and increasing prices were indicated as affecting access to food; maize prices increased 300% since 2004/2005, and the price of cooking oil rose 100% between May 2007 and May 2008 (LVAC 2008). These increases affected most households; however, the prices of commodities in urban areas increased at higher rates than prices in rural areas (DMA, LVAC, and WFP 2008). Because of the increase in food prices, a 41% expenditure deficit for urban households was expected over the next year, taking into account the costs of staple and minimum non-staple items, such as soap, paraffin for heating, matches, cooking oil, beans, salt and other household necessities (LVAC 2008). The deficit did not account for expenses such as education, medical costs, farm inputs, or other expenses such as rent, water, or electricity (LVAC 2008).

Another area to which anthropologists can contribute is through the examination of trade and food provisioning policies, with special emphasis on how global policies are localized. In the essay "Practicing Anthropology in a Time of Crisis," Brondo (2010) highlights the need for anthropologists to document the effects of resource scarcity and increasing power of transnational corporations on marginalized peoples. Such work can serve to situate globalization into local contexts. Additionally, in an examination of changes experienced by residents of southern Belize, Zarger emphasizes the importance of including the "political and historical ecologies of land use and food production when considering the local impacts of global food crises" (2009:130). Zarger underscores the role of structural adjustment and related trade policies in contributing to shifts in food production practices, yet points out that such shifts in food production are not necessarily new to Mayan livelihoods.

While initially addressing the ways economic policies have affected Haiti's vulnerability to the food crisis, Mazzeo (2009) also explored variations in rural livelihoods as contributing to differences in how communities experience food crises. He notes that lack of access to food in Haiti is "not a problem of supply; it's because of the high cost of living" (Mazzeo 2009:115). Further, he argues that the country's burgeoning dependence on staple food imports contributed significantly to its vulnerability to the food crisis and continues to present problems in terms of food security. While such broad analyses are useful to provide context, Mazzeo also explores several case studies of rural livelihoods in varying areas of Haiti. By recognizing the differences between multiple rural communities, anthropologies can contribute to tailoring solutions which are both appropriate and sustainable.

Although it is important to understand not only the larger social, political and economic context in which such crises occur as well as the local realities in which they are felt, it is also of vital importance for anthropologists to follow Lois Stanford's (2008) call for an analysis of the linkages between global and local food systems. Rosing (2009) suggests a method for studying these linkages, with the goal of teasing out the ways household and individual decisions about food are constrained and how they cope. In a study in the Dominican Republic he urges researchers to follow food from table to source rather than confining themselves to the typical examination of consumption as an outcome of production. Starting from an ethnographically grounded examination at the household level, Rosing traces factors related to food acquisition, taking us from the home to neighborhood

stores, work place, the availability of staples in local markets, and to the politics of food imports. Anthropologists can further contribute to these examinations by coupling such analyses with systematic nutrition assessment to determine the impact of such factors at different levels.

Whether it is in Colombia, Lesotho, Haiti, Ethiopia, or anywhere else in the world, the Global Food Crisis has had clear detrimental effects for the health and well-being of millions of individuals and families, including many in the United States. Unfortunately, it is very likely that such effects will continue to be felt, especially in light of the very unpredictable changes brought about by global climate change. For example, while the IDP populations with whom the authors had contact in Bogotá experienced a little respite when the torrential rains stopped for a few weeks, this was short lived. As the weather deteriorated again, severe mudslides, road blockages, and ruined crops were once again daily occurrences. The increasing levels of food insecurity and ill-health among men, women, and children from the poorest areas of the country were further fueled by rises in the price of oil, which further increased the price of basic food staples. While food distribution efforts are very valuable and certainly alleviate the dire situation in which the most vulnerable people find themselves, they are a temporary—and often unsustainable—solution. A concerted effort to address the multiplicity of factors (social, economic, political, and environmental) that put people at risk is needed to design and implement long-lasting programs that respond to the needs of local communities. It is precisely in this area that anthropologists and other social scientists can best contribute their skills and expertise.

References

Begovic B, Matkovic G, Mijatovic B, Popovic D. 2007. From Poverty to Prosperity: Free Market Based Solutions. Belgrade, Serbia: Center for Liberal-Democratic Studies (CLDS).

Benson T, Minot N, Pender J, Robles M, Von Braun J. 2008. Global Food Crises. Monitoring and Assessing Impact to Inform Policy Responses. Washington, DC : IFPRI Food Policy Report, September.

Bhagwati J. 2004. In Defense of Globalization. Oxford: Oxford University Press.

Bloem M, Semba RD, Kraemer K. 2010. Castel Gandolfo Workshop: An Introduction to the Impact of Climate Change, the Economic Crisis, and the Increase in the Food Prices on Malnutrition. J Nutr 140:132S–135S.

Brondo KV. 2010. Practicing Anthropology in a Time of Crisis: 2009 Year in Review. Am Anthropol 112(2):208–218.

Bryceson DF, Fonseca J. 2006. Risking Death for Survival: Peasant Responses to Hunger and HIV/AIDS in Malawi. World Dev 34(8):1666–2006.

Carmichael SL, Yang W, Herring A, Abrams B, Shaw GM. 2007. Maternal Food Insecurity Is Associated with Increased Risk of Certain Birth Defects. Am Soc Nutr J of Nutr 137:2087–2092.

Clemmitt M. 2008. Global Food Crisis: What's Causing the Rising Prices? CQ Res 18(24):555–576. http://www.cqpress.com/product/Researcher-Global-Food-Crisis-v18-24.html (accessed January 12, 2011).

Coates J, Swindale A, Bilinsky P. 2007. Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide. Version 3. Washington, DC: Food and Nutrition Technical Assistance Project (FANTA). http://www.fantaproject.org/downloads/pdfs/HFIAS_v3_Aug07.pdf (accessed December 19, 2010 .

CNN. 2011. Global Food Prices Hit Record High. January 7. http://www.cnn.com/2011/BUSINESS/01/05/food.prices.ft/index.html (accessed January 11, 2011).

Collins L. 2009. The Impact of Food Insecurity on Women's Mental Health How it Negatively Affects Children's Health and Development. http://pi.library.yorku.ca/ojs/index.php/jarm/article/viewFile/22523/21003 (accessed January 5, 2011).

Conceição P, Mendoza RU. 2009. Anatomy of the Global Food Crisis. Third World Q 30(6):1159–1182.

Darnton-Hill I, Cogill B. 2010. Maternal and Young Child Nutrition Adversely Affected by External Shocks Such As Increasing Global Food Prices. J Nutr 140:162S–169S.

Dufour DL. 2010. Nutrition, Health, and Function. In: Larsen CS, ed. A Companion to Biological Anthropology. Malden, MA: Wiley-Blackwell, pp. 194–206.

Food and Agriculture Organization of the United Nations (FAO). 2009. Number of Hungry People Rises to 963 Million. http://www.fao.org/news/story/en/item/8836/ (accessed May 1, 2009).

Food and Agriculture Organization of the United Nations (FAO). 2008. The State of Food Insecurity in the World. Rome: Food and Agriculture Organization. http://www.fao.org/docrep/011/i0291e/i0291e00.htm (accessed December 10, 2010).

Food and Agriculture Organization of the United Nations (FAO). 2006. Trade Reforms and Food Security: Conceptualizing the Linkages. http://www.fao.org/docrep/005/y4671e/y4671e00.htm (accessed January 25, 2011).

Glewwe P, King EM. 2001. The Impact of Early Childhood Nutritional Status on Cognitive Development: Does the Timing of Malnutrition Matter? World Bank Econ Rev 15(1):81–113.

Hadley C, Belachew T, Lindstrom D, Tessema F. 2009. The Forgotten Population? Youth, Food Insecurity, and Rising Prices: Implications for the Global Food Crisis. NAPA Bull 3 (1):77–91.

Hadley C, Patil C. 2006. Food insecurity in rural Tanzania is associated with Maternal Anxiety and Depression. Am J Hum Biol 18:359–368.

Hajjar RR, Kamel HK, Denson K. 2004. Malnutrition in Aging. Internet J Geriatr Gerontology 1(1). http://www.ispub.com/ostia/index.php?xmlFilePath=journals/ijgg/vol1n1/malnutrition.xml#h1–2 (accessed January 19, 2011).

Hamelin A-M, Beaudry M, Habicht J-P. 2002. Characterization of Household Food Insecurity in Quebec: Food and Feelings. Soc Sci Med 54:119–132.

Heflin CM, Siefert K, Williams DR. 2005. Food Insufficiency and Women's Mental Health: Findings from a 3-year Panel of Welfare Recipients. Soc Sci Med 61(9):1971–1982.

Internal Displacement Monitoring Center (IDMC) and Norwegian Refugee Council (NRC). 2010. Colombia Government response improves but still fails to meet needs of growing IDP population. http://www.internal-displacement.org/8025708F004BE3B1/(httpInfoFiles)/4BCA7DF31521CC16C12577F5002CED98/$file/Colombia (accessed January 19, 2011).

Katz SH. 2008. The World Food Crisis: An Overview of the Causes and Consequences. Anthropol News 49(7):4–5.

Levitsky DA, Strupp BJ. 1995. Malnutrition and the Brain: Changing Concepts, Changing Concerns. J Nutr 125 (8S sup):2212–2220.

Lesotho Disaster Management Authority (DMA), Lesotho Vulnerability Assessment Committee (LVAC) and the UN World Food Programme (WFP). 2008. Vulnerability and Food Insecurity in Urban Areas of Lesotho: An Assessment of the Impact of High Prices on Vulnerable Households in Ten Major Cities.

Livelihood Vulnerability Assessment Committee (LVAC). 2008. Food Security and Vulnerability in Lesotho 2008. Disaster Management Authority, Office of the Prime Minister.

Mazzeo J. 2009. Lavichè: Haiti's Vulnerability to the Global Food Crisis. NAPA Bull 32 (1):115–129.

Messer E. 2009. Rising Food Prices, Social Mobilizations, and Violence: Conceptual Issues in Understanding and Responding to the Connections Linking Hunger and Conflict. NAPA Bull 32(1):12–22.

Mittal A. 2009. The Blame Game: Understanding Structural Causes of the Food Crisis. In: Clapp J, Cohen MC, eds. The Global Food Crisis: Governance Challenges and Opportunities. Waterloo, ON: Centre for International Governance Innovation (CIGI) and Wilfrid Laurier University Press, pp. 13–28.

Nature News. 2010. Return of La Niña. September 16, 2010. http://www.nature.com/news/2010/100916/full/news.2010.477.html (accessed January 24, 2011).

Nord M, Andrews M, Carlson S. 2009. Household Food Security in the United States, 2008. ERR-83, U.S. Dept. of Agriculture, Economic Research Service. November 2009.

Nord M, Andrews M, Carlson S. 2008. Household Food Security in the United States, 2007. ERR-66, U.S. Dept. of Agriculture, Economic Research Service. November 2008.

Nord M, Coleman-Jensen A, Andrews M, Carlson S. 2010. Household Food Security in the United States, 2009. ERR-108, U.S. Dept. of Agriculture, Economic Research Service. November 2010.

Reuters. 2010. Columbia Seeks Aid as Rescuers Dig Out Mudslide Victims. December 7. http://www.reuters.com/article/2010/12/08/us-colombia-disaster-idUSTRE6B70J920101208 (accessed January 10, 2011).

Ridgwell H. 2011. Rising Prices Fuel Anti-Government Sentiments across Middle East. January 20. Voice of America. http://www.voanews.com/english/news/africa/Rising-Prices-Fuel-Anti-Government-Sentiments-Across-Middle-East-114291989.html (accessed January 26, 2011).

Romero-Daza N, Himmelgreen DA, Noble CA, Turkon D. 2009. Dealing with the Global Food Crisis in Local Settings: Nonintensive Agriculture in Lesotho, Southern Africa. NAPA Bull 32(1):23–41.

Rosing H. 2009. Economic Restructuring and Urban Food Access in the Dominican Republic. NAPA Bull 32(1):55–76.

Sapsford D, Garikipati S. 2006. Trade Liberalisation, Economic Development and Poverty Alleviation. World Economy 29:1571–1579.

Scrimshaw NS, Taylor CE, Gordon JE. 1968. Interactions of Nutrition and Infection. Geneva: WHO. World Health Organ Mon Ser No. 57, p. 1–329.

Scrimshaw N. 1998. Malnutrition, Brain Development, Learning, and Behavior. Nutr Res 18(2):351–379.

Shah M, Osborne N, Mbilizi T, Vilili G. 2002. Impact of HIV/AIDS on Agricultural Productivity and Rural Livelihoods in the Central Region of Malawi. Lilongwe, Malawi: CARE Int.

Sorsdahl K, Slopen N, Siefert K, Seedat S, Stein DJ, Williams DR. 2010. Household Food Insufficiency and Mental Health in South Africa. J Epidemiol Community Health jech.2009.091462. http://jech.bmj.com/content/early/2010/04/28/jech.2009.091462.full.pdf (accessed January 19, 2011).

Stanford L. 2008. Globalized Food Systems: The View from Below. Anthropol News 49(7):7–10.

Suttmann U, Ockenga J, Selberg O, Hoogestraat L, Deicher H, Müller MJ. 1995. Incidence and Prognostic Value of Malnutrition and Wasting in Human Immunodeficiency Virus-Infected Outpatients. JAIDS and HR 8(3):239–246.

Tang AM. 2003. Weight loss, Wasting, and Survival in HIV-Positive Patients: Current Strategies. AIDS Reader 13(supp. 12):S23–S27.

U.S. Census Bureau. 2011. U.S. & World Population Clocks. http://www.census.gov/main/www/popclock.html (accessed January 21, 2011)

Vidal J. 2007. Global Food Crisis Looms as Climate Change and Fuel Shortages Bite; Soaring Crop Prices and Demand For Biofuels Raise Fears of Political Instability. The Guardian, November 3. http://www.guardian.co.uk/environment/2007/nov/03/food.climatechange (accessed January 5, 2011).

World Fact Book. 2010. Columbia. Washington, DC: Central Intelligence Agency. https://www.cia.gov/library/publications/the-world-factbook/geos/co.html (accessed January 24, 2011).

von Braun J. 2008a. Food and Financial Crises: Implications for Agriculture and the Poor. Food Policy Report No. 20. Washington, DC: International Food Policy Research Institute. http://www.ifpri.org/publication/food-and-financial-crises (accessed January 25, 2011).

von Braun J, Sheeran J, Ngongi N. 2008. Responding to the Global Food Crisis: Three Perspectives. Washington DC: International Food Policy Research Institute (IFPRI). http://www.ifpri.org/publication/responding-global-food-crisis-three-perspectives (accessed January 25, 2011).

Weiser SD, Leiter K, Bangsberg DR, Butler LM, Percy-de Korte F, Hlanze Z, Phaladze N, Iacopino V, Heisler M. 2007. Food Insufficiency is Associated with High-Risk Sexual Behavior among Women in Botswana and Swaziland. PLoS Med 4(10):e260.

World Food Program (WFP). 2008. WFP says High Food Prices a Silent Tsunami, Affecting Every Continent. http://www.wfp.org/news/news-release/wfp-says-high-food-prices-silent-tsunami-affecting-every-continent (accessed January 25, 2011).

Whitaker RC, Phillips SM, Orzol SM. 2006. Food Insecurity and the Risks of Depression and Anxiety in Mothers and Behavior Problems in their Preschool-aged Children. Pediatrics 118(3):e859–e868.

Zarger R. 2009. Mosaics of Maya Livelihoods: Readjusting To Global and Local Food Crises. NAPA Bull 32(1):130–151.