

Global Hunger: Can It Be Eliminated?

Introduction

The World Food Programme (2014) declares: “. . . 805 million people in the world do not have enough food to lead a healthy active life. That's about one in nine people on earth.” Yet Eric Holt Gimenez (2012) claims that we have enough food to feed 10 billion people, the number projected to be on this planet in 2050. It is not lack of food that is creating starvation; it is lack of political will.

In this paper we will explore 1) the location of the people who are starving; 2) what happens to the food we now have; and 3) food waste reduction. Among the factors that create food shortages are climate change (and its impact on crops, livestock and fish), and politics (including, according to Cohen and Reeves [1995], war and militarism; racism and ethnocentrism; gender discrimination; and the vulnerability of children and elderly people).

Half the food in the world is produced by “1.5 billion farmers working small plots for which monocultures of any kind are unsustainable” (Gimenez 2012). He sees “agroecology” as the solution for locally-based food economies. On the other hand, Paul Collier (2008) extols the “Brazilian model” of large-scale, genetically-modified, monoculture, corporate farming, which tailors the resilience of the crop to the restrictions of the local environment. We will also examine these contrasting views.

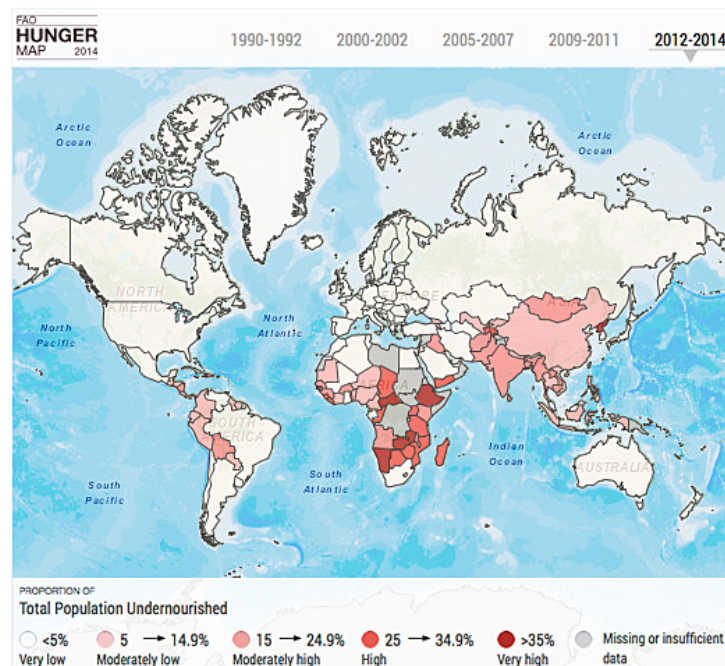
Gimenez further states that: “To end hunger we must end poverty and inequality.” This may be asking too much. However, once we have explored a partial representation of the literature on global hunger, we hope to persuade the reader that it is possible to eliminate it in this century, if only we can summon the necessary political will.

1. Who Are The Hungry and Where Are They Located?

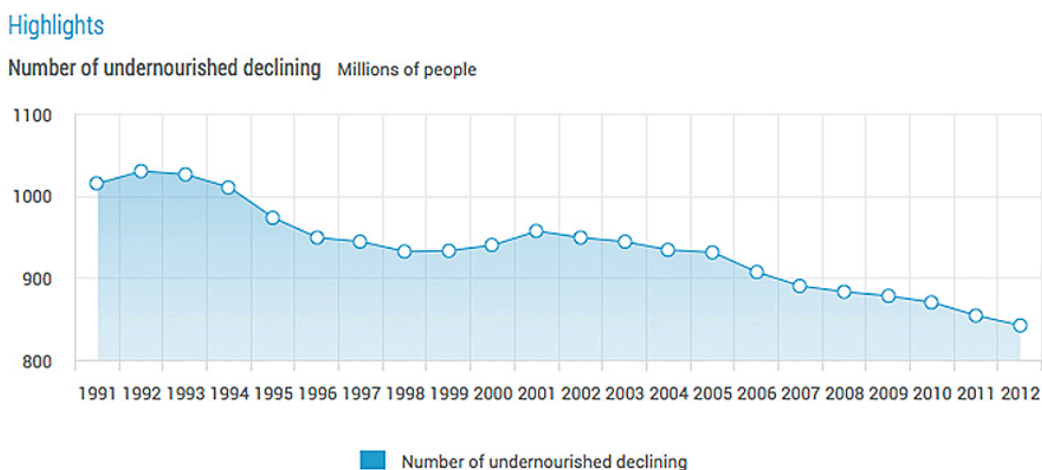
According to the World Food Programme (2014), “Hunger kills more people every year than AIDS, malaria & tuberculosis combined.” They go on to say:

- Some 805 million people in the world do not have enough food to lead a healthy active life. That's about one in nine people on earth.
- The vast majority of the world's hungry people live in developing countries, where 13.5 percent of the population is undernourished.
- Asia is the continent with the [largest number of] hungry people — two thirds of the total. The percentage in southern Asia has fallen in recent years but in western Asia it has increased slightly.
- Sub-Saharan Africa is the region with the highest *prevalence* (percentage of population) of hunger. One person in four there is undernourished.

A map published in 2014 by the FAO (Food and Agriculture Organization of the United Nations), shows where starvation is prevalent, including the percentage of hungry people in each region:



Another table, also published by the FAO, shows that the number of undernourished people has declined in recent years:



However, these declining figures are not as positive as they appear, since there are — the World Food Programme (2014) asserts — still 805 million hungry people on the planet today.

2. What Happens to the Food We Have?

2.1 Agroecology vs. Agribusiness

According to Eric Holt Gimenez, in an article in *The Huffington Post* (2 May 2012), we already have enough food to feed 10 billion people, the size the world’s population is estimated to reach in 2050. However, this food is not reaching the people who most desperately need it. He cites a study from McGill University and the University of Minnesota, published in *Nature*, which compared organic and conventional yields from sixty-six studies and over three hundred trials. Researchers found that, on average, “conventional systems out-yielded organic farms by 25 percent — mostly for grains, and depending on conditions.”

Gimenez goes on to say that “hunger is caused by poverty and inequality, not scarcity.” However, the people making less than \$2 a day — most of whom are poor farmers cultivating small plots of unviable land — cannot afford to buy this food. Meanwhile, giant agribusiness farms are over-producing food, yet this surplus does not reach the starving. The funding for

research on the genetically modified seeds (that go to these giant farms) has “dwarfed funding for organic agriculture by 99 to 1” (Gimenez, 2012).

It is a fact that half the food in the world is produced by 1.5 billion farmers working small plots that cannot sustain monocultures and that do not utilize harmful chemicals (Gimenez 2012). Such methods — emphasizing rich crop diversity — conserve soils and water and have proved to produce the most rapid and sustainable results. These eco-friendly techniques can also increase productivity by 100-300 percent. In this way, productivity could be raised for resource-poor farmers who are currently starving. Shifting the focus back onto more productive — and less environmentally (and humanly) destructive — organic research would be one key to ending world hunger (Gimenez 2012).

The U.N. Special Rapporteur on the Right to Food agrees, and released a report advocating for structural reforms and a shift to “agroecology.” They commissioned 400 experts for the four-year International Assessment on Agriculture, Science and Knowledge for Development (IAASTD 2008), who concluded that agroecology and locally-based food economies (rather than the global market) encompass the best strategies for combating poverty and hunger (Gimenez 2012).

2.2 Reducing Food Waste

In another approach, the EPA encourages people to donate food, rather than waste it. They assert that: “50 million Americans do not have access to enough food” (EPA 2014). Organizations and food stores can donate safe and healthy food to a food bank or food rescue organization to feed those in need. Not wasting food also serves to reduce methane in landfills; conserve the resources that went into making it (e.g. water, fertilizers, energy); turn it into compost; and improve sanitation and public safety. Economic benefits include lower disposal costs; increased labor and energy efficiency; and tax benefits as a result of donating food (EPA 2014).

Dana Gunders, in a Natural Resources Defense Council (NRDC) Issue Paper (2012), says that America is losing up to 40 percent of its food in landfill waste (1). She cites staggering

statistics showing that the process of getting food on our tables “eats up 10 percent of the total U.S. energy budget, uses 50 percent of U.S. land, and swallows 80 percent of all freshwater consumed in the United States” (1). Reducing food losses, she claims, by just 15 percent “would be enough food to feed more than 25 million Americans every year . . .” (1)

Gunders goes on for twenty-six more pages to outline losses in farming, post-harvest, processing, distribution, retail, food service, household and disposal. She then describes how inefficiencies could be eliminated through actions taken by businesses, government and consumers — as well as what steps can be pursued to eliminate waste at each stage in the supply chain (2012). This is an astonishing paper that should be required reading for every American.

3. Factors Influencing Food Supply

3.1 Climate Change

3.1.a Impact on Crops

The EPA (2013) maintains that: “Changes in temperature, amount of carbon dioxide (CO₂), and the frequency and intensity of extreme weather could have significant impacts on crop yields.” For example, warmer temperatures may make some crops grow more quickly, but they can also reduce yields, not allowing time for seeds to develop. Additionally, if the temperatures exceed a crop’s optimum temperature, outputs will decline.

Increased temperatures may go hand-in-hand with increased CO₂ concentrations, which could increase the yield for wheat and soy by “30% or more.” However, decreases in water and nutrients may also occur under these conditions, leading to crop failure. This could have a disastrous effect on the U.S. economy, as America currently exports “more than 30% of all wheat, corn, and rice on the global market” (EPA 2013).

3.1.b Impact on Livestock

According to the EPA (2013), Americans “consume more than 37 million tons of meat annually.” However, heat waves can threaten livestock, and these events are projected to increase

in frequency and duration with continuing climate change. Heat stress increases “vulnerability to disease, reduce[s] fertility, and reduce[s] milk production” (EPA 2013).

Earlier springs and warmer winters make ideal conditions for the survival of parasites and pathogens. Increased rainfall also may increase the number of diseases that affect livestock (EPA 2013).

3.1.c Impact on Fisheries

In the United States, “five million metric tons of fish and shellfish each year” are caught or harvested (EPA 2013). Overfishing and water pollution have already created serious problems for this industry — climate change will only add to their concerns.

Many species are migrating northward as the waters warm. For example, North Atlantic cod require water temperatures below 54⁰F. The EPA goes on to say that “Even sea-bottom temperatures above 47⁰F can reduce their ability to reproduce . . .” As these aquatic species migrate into new areas, they come into competition with native species, and this can also cause trouble (2013).

Additionally, some species are experiencing new bacterial diseases as the waters warm and these lead to die-offs and decline (EPA 2013). Finally, reproduction cycles can also be affected by global warming, as exemplified by salmon in the Pacific Northwest.

Finally, the increase in CO₂ in the atmosphere will increase acidity in the world’s oceans. This can harm shellfish, whose shells are created from calcium, which can be weakened by acid. It may also threaten sensitive ecosystems upon which some fish and shellfish rely (EPA 2013).

3.2 Politics and Hunger

A study at Ohio State University found that “high levels of internal war and violence, political repression, high levels of arms trade, and population pressures created hunger in fifty-three developing countries with populations of over one million. “Political discrimination and internal violence against minorities or other groups is one key to the persistence and increase in child hunger rates,” Craig Jenkins, co-author of the study, said (Grabmeier and Jenkins, n.d.).

However, war and violence are not the sole causes of this dilemma. In the winter of 2008 Paul Collier wrote, "Politicians and policymakers do, in fact, have it in their power to bring food prices down. But so far, their responses have been less than encouraging." He takes exception to Gimenez' findings, citing the Brazilian model:

In Brazil, large, technologically sophisticated agricultural companies have demonstrated how successfully food can be mass-produced. To give one remarkable example, the time between harvesting one crop and planting the next — the downtime for land -- has been reduced to an astounding 30 minutes. Some have criticized the Brazilian model for displacing peoples and destroying rain forest, which has indeed happened in places where commercialism has gone unregulated. . . . Another benefit of the Brazilian model is that it can bring innovation to small farmers as well. In the "out-growing," or "contract farming," model, small farmers supply a central business. Depending on the details of crop production, sometimes this can be more efficient than wage employment (Collier 2008).

He concludes that, by allowing commercial farming to replace "peasant agriculture," global food supply would increase in the "medium term." However, he fails to note that as more and more land is taken over by genetically-modified (GM) monoculture crops, the diversity of the food supply (which is essential to human health) will decrease.

He goes on to promote the increased use of genetically-modified crops. As the climate grows warmer, sub-Saharan Africa will need more and more help to sustain itself. He goes on to quote Jennifer Thomson (of the Department of Molecular and Cell Biology at the University of Cape Town): "Maize, she reports, can be made more drought-resistant, buying Africa time in the struggle against climatic deterioration. Grain can be made radically more resistant to fungi, reducing the need for chemicals and cutting losses due to storage" (Collier 2008).

However, maize is not a healthy grain for large-scale human consumption, as evidenced by the obesity epidemic in the developed world. The use of corn syrup as a preservative and food enhancer, together with corn-fed meat and the over-use of antibiotics in livestock diets, has jeopardized the health and lives of those who can afford to eat these products.

Asians are taking home more money and thus, eating more and better. However, because it takes six kilograms of grain to produce one kilogram of beef, the change from carbohydrates to a protein-rich diet drives up the demand for grain. Collier (2008) goes on to say: "Thus, if the

supply of food were fixed, in order to choke off an increase in demand of 10 percent after a 20 percent rise in income, the price of food would need to double. In other words, modest increases in global income will drive prices up alarmingly unless matched by increases in supply.”

Even as demand for food rises, crop failures (e.g., the ongoing drought in Australia) will hike up prices. Budgets providing insurance for lean times (for example, The World Food Program) are set in dollars, and buy less when demand and prices are up, but supply is down.

Unfortunately, according to Paul Collier (2008), the “peasants” who traditionally supported themselves by subsistence farming are now flocking to the cities to become the urban poor. Since the urban poor cannot grow their own food, they are the ultimate victims of food shortages and rising food prices. He concludes his article by saying, “politicians will need to deliver these messages and forge new alliances. If food prices are not brought down fast and then kept down, slum children will go hungry, and their future lives will be impaired.”

Marc J. Cohen and Don Reeves (1995) listed the six principal causes of hunger as being poverty and powerlessness; population, consumption and the environment; violence and militarism; racism and ethnocentrism; gender discrimination; and the vulnerability of children and elderly people. As fresh water, land, forests and fisheries are operating at or beyond capacity, the authors state, the poor — lacking political influence — become marginalized in the competition for resources. They are forced onto unsustainable land or into overcrowded cities, where they starve (Cohen and Reeves, 1995).

Conclusion

In this paper, we have taken a look at the problem of global hunger and reviewed a portion of the literature concerning this issue. To begin with, we looked at who is still suffering from hunger, and where they are located. In spite of the fact that undernourishment has greatly declined in recent years, the World Food Programme (2014) asserts that there are still 805 million hungry people on the planet.

According to Eric Holt Gimenez (2012), we have enough food to feed 10 billion people, but not the political will to properly distribute it. He also feels that using more organic, diverse,

small-scale farming techniques would be more eco-friendly and boost production. Paul Collier (2008), on the other hand, finds the solution in large-scale, genetically-modified (GM) food operations that would tailor the product (normally a grain, like maize) to meet the particular challenges of a specific region.

We also looked at factors that influence food supply, such as climate change, using data offered by the EPA in 2013. Global warming will have a strong impact on our crops, livestock and fish in this century, and we must be prepared for these changes. Other factors, according to Cohen and Reeves (1995), include war and militarism; racism and ethnocentrism; gender discrimination; and the vulnerability of children and elderly people.

Reducing our massive food waste is equally important, as we can feed many more people that way (EPA 2014). Gunders' paper (2012) for the Natural Resources Defense Council (NRDC) outlined in great detail exactly how every American can boost the efficiency of the food system. It is a remarkable paper that should be distributed to every American, as "reducing food losses by just 15 percent would be enough food to feed more than 25 million Americans" annually (Gunders 2012, 1).

However, according to Gimenez (2012), giving poor farmers access to more land and increased resources is a political problem that does not seem to have an easy solution. Agroecology is his solution for increasing yields without hurting either the land or the consumer. Collier's large-scale GM solution may also be useful if not overused, as there is more than one way to farm, and increasing production locally is the goal, whatever the means. Perhaps we should consider tailoring the solution to the region, including its needs and limitations.

We conclude this paper with these hopeful words from Cohen and Reeves, (1995): "The world community has both the knowledge and the resources to eliminate hunger. Putting these tools to work requires us to ground our choices — small and large, individual and collective, political and economic — in ethical values, including empowerment and justice, stewardship of common resources for the common good, and affirmation of diversity."

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