

The Right to Food: An Attainable Human Right

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Abstract

States have the obligation to fulfill the necessary and non-negotiable human right to food, and indeed realizing this global right is possible. This paper analyzes several aspects of the right to food. First, it looks at challenges that are hindering the realization of this right. Climate change, lack of development, trade routes, inadequate infrastructure, and gender gaps in agricultural production are discussed and framed in relation to state duties to invest in solutions to these problems. The paper also examines opportunities that have proved especially helpful in eliminating hunger, including the creation of genetically-modified organisms and systems of root intensification that promise great advances in food production. States have been successful in partnering with organizations and other governments to protect food rights, as well as leading to reductions in child malnutrition. The final and most important part of the paper considers recommendations for states as they to continue to work towards fulfilling obligations related to the right to food. This paper argues that if states take a multi-faceted approach, the right to food – a building block for other human rights and for the continued health of society – can be realized. A rights-based approach to ending hunger is beneficial, efficient, and necessary.

The right to food is a human right recognized under international law, and it is generally defined as the right to feed oneself with dignity – either by purchasing one’s own food or producing it. There are two prominent and authoritative definitions of the right to food means. According to the Committee on Economic, Social, and Cultural Rights (1999) in General Comment Number 12: “The right to adequate

food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement.” The United Nations Special Rapporteur on the Right to Food (currently Olivier De Schutter) defines the right to food as “the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensure a physical and mental, individual and collective, fulfilling and dignified life free of fear” (De Schutter, 2013). This right includes the right for people to have the means to produce and or buy their own food. Food production requires land, water, seeds, and other resources. To buy one’s own food, a person needs access to markets and money to buy food with. Therefore, the right to food implies that states need to provide a situation in which people can use their resources to produce sufficient food for their families and themselves (De Schutter, 2013).

It is critical to realize that states are responsible under international law to protect the right to food. The International Covenant on Economic, Social, and Cultural Rights is legally binding for all states who are party to it. The United Nations Committee on Economic, Social, and Cultural Rights is the body in charge of the Covenant, and it states that “the right to adequate food shall ... not be interpreted in a narrow or restrictive sense which equates it with a minimum package of calories, proteins and other specific nutrients. The right to adequate food will have to be realized progressively” (Committee on Economic, Social, and Cultural Rights, 1999). States absolutely have an obligation to take the necessary action to alleviate and mitigate hunger at all times, regardless of the circumstances. The right to food does not just mean the right to be able to feed oneself; sometimes, in cases of natural disaster or armed conflict, people need the state to provide food to them directly (De Schutter, 2013). The specific obligations of state parties are defined in article 2 in the International Covenant on Economic, Social, and Cultural Rights. General Comment No. 12 also lays out the various obligations that state parties

have to comply with in order to make sure the right to food is being realized at a national level. States have the obligation to:

respect existing access to adequate food requires States parties not to take any measures that result in preventing such access; the obligation to protect requires measures by the State to ensure that enterprises or individuals do not deprive individuals of their access to adequate food; the obligation to fulfill (facilitate) means the State must pro-actively engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security; [and] whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to fulfill (provide) that right directly. This obligation also applies for persons who are victims of natural or other disasters (Committee on Economic, Social, and Cultural Rights, 1999).

While all of these state obligations are supposed to be realized progressively and over time, there are some bare minimum core obligations that, in theory, should be put into effect immediately. These immediate obligations include refraining “from any discrimination in access to food as well as to means and entitlements for its procurement, on the grounds of race, color, sex, language, age, religion, political or other opinion, national or social origin, property, birth or other status. States are further prohibited to take retrogressive measures, i.e. deliberate measures which result in the deterioration of current level of fulfillment of the right to food” (United Nations, 1966). The state needs to take whatever steps necessary to make sure that their citizens are all free from hunger and have adequate food in the shortest amount of time, but the Covenant does say that states have some margin of discretion in the way they choose to implement the right to food. As long as the right to food includes availability of food, accessibility of food, and adequacy of food, then the key elements of the right to food are being realized (De Schutter, 2013).

It is concretely defined that the state has a non-negotiable duty to provide their citizens the right to food. This fact, coupled with the actuality that there is enough food to adequately feed all persons of the world, makes it quite puzzling that 870 million people around the world are suffering

from chronic hunger. The right to food should be internationally realized, yet in reality hunger plagues the global community. This research paper attempts to better understand the obstacles keeping the right to food from being realized, and more importantly it examines what can be done to make hunger a problem of the past. There are a myriad of challenges facing the right to food, but there are also many opportunities and potential solutions. This research paper analyzes factors that hinder states' abilities to achieve the right to food, such as: the negative effects of climate change, the issues that come with lack of development, ineffective trade routes and basic infrastructure, and gender gaps in agriculture. However, this paper also discusses potential solutions for eliminating world hunger, such as vital partnerships and an emphasis on feeding children, as well as agricultural advancements related to genetic modification and organic farming methods. This paper argues that the realization of the right to food is absolutely possible, but it requires multi-faceted approaches. Hunger is out of place in this time period of history. No major scientific breakthroughs are required to make hunger go away; just the careful observation of what is not working in our current system. The right to food, with the help of a global community willing to work creatively, is an attainable human right.

Challenges

Today's global trends in malnutrition reflect an uneven rate of positive changes over the last several decades. The number of hunger victims was actually on a dramatic decline during the 1980s, dropping from 959 million hungry individuals to 791 million. However, after 1990 the amount of undernourished people suddenly increased at a shocking rate of almost four million people per year in developing countries. Around 2002, there were 854 million worldwide hunger victims. The number now stands at 870 million (United Nations World Food Programme, n.d.). The obligation of the state to provide the right to food, combined with the fact that there is indeed enough food in the world to adequately feed every human being, means that this number should be drastically lower. As far as

specific locations around the world where people are most affected, over half of the 870 million hungry people are in the Pacific region and within Asia. About one-fourth of the hungry reside in Sub-Saharan Africa. The UN World Food Programme created a comprehensive map of where undernourishment is the worst, and it shows that Ethiopia, Eritrea, the Democratic Republic of Congo, Burundi, the United Republic of Tanzania, Malawi, Zambia, and Mozambique are countries where 35% or higher of their population is undernourished. Of the 870 million people who are hungry, less than 8% of these people are hungry due to emergencies (UN World Food Programme, n.d.). The following section illustrates some of the key reasons why the right to food is not being realized globally.

Climate Change

There are several food-related dangers that go along with the issue of climate change, particularly related to the effects climate change has on human well-being and agriculture. According to the International Food Policy Research Institute's 2009 Food Policy Report, the impacts of the biggest concern are 1) the biological effect climate change will have on crop yields, 2) the resulting consequences on things such as production, price, and consumption, and 3) the influence all of this will have on child malnutrition and per capita calorie consumption (Nelson et al., 2009). If steps are not taken to lessen the effects of climate change, the right to food will become significantly more difficult to achieve.

First, climate change will have biological effects on crop yields. Directly, climate change could harm both rain-fed and irrigated crops. Precipitation and temperature changes will negatively affect rain-fed crop yield, whereas irrigated crops will suffer predominately from temperature changes. Not surprisingly, developing countries are hit harder by these changes than developed countries. Not only that, some crop yields will actually increase with climate change in developed countries. Climate change also has an indirect effect on irrigated crops by impacting the availability of water (in the form of

precipitation). Not only would there be precipitation changes, higher temperatures due to climate change increase the water demand of crops (Nelson et al., 2009). It is important to note that these changes would not affect all the regions of the world similarly.

Food prices, consumption, and production are also useful ways to demonstrate the negative effects of climate change. Without climate change, the prices worldwide for the most vital crops (maize, rice, wheat, and soybeans) would increase due to population, biofuel demand, and income rises between the years 2000 and 2050. Without climate change, the price for maize would increase by 63%; rice's increase in price would be 62%, wheat by 39%, and soybeans by a whopping 72%. With climate change, however, the price increase would be exacerbated. With climate change, maize would tack on another 52-55% raise, rice would have an additional 32-37% increase, wheat an extra 94 to 111%, and soybeans another 11 to 14% increase (Nelson et al., 2009). Not surprisingly, the production of crops is also harmed by impending climate change. The declines in production range from a 44 to 49% decrease in wheat production in South Asia to a 15% decline of rice production in Sub-Saharan Africa. The inevitable rise in food prices, coupled with the diminished production rates of crops, would be devastating to the world's ability to protect the right to food (Nelson et al., 2009). The change in calorie availability and the change in the amount of malnourished children between 2000 and 2050 are two of the prominent measurements of calculating the devastation of climate change. Calorie availability would decrease relative to the year 2000 levels. On average, developing countries would experience a 10% relative decline compared to 2000 (Nelson et al., 2009).

While climate change has been increasingly central to research, policy, and development agendas, more aggressive investments need to be made. According to the 2009 Food Policy Report, "climate change is real and threatens to undermine social and ecological sustainability. In agriculture, adaptation efforts focus on implementing measures that help build rural livelihoods that are more resilient to climate variability and disaster" (International Food Policy Research Institute, 2009). There is

no denying that climate change will negatively affect agriculture and human well-being. Therefore, there is an obligation to invest in agricultural productivity, which will significantly help in the worldwide protection of the right to food. The International Food Policy Research Institute (2009) contends that it is necessary to (at a minimum) spend what it takes to reduce child malnutrition to what it would be without climate change. It would take an estimated \$7.1 billion to \$7.3 billion in investments to achieve these bare minimum levels. The international community must ensure “the productivity of agriculture as a means of meeting the future challenges that climate change represents” (International Food Policy Research Institute, 2009). Research funding must be made available to investigate biological solutions, land efficiencies, climate change reduction, and other strategies for ensuring the right to food. It is incredibly challenging to convince states to commit to such investments, but these are costs that are absolutely essential in realizing the right to food.

Lack of Development and Trade Routes

The lack of basic infrastructure, development, and trade routes creates obstacles for the protection of the right to food. While the market for food works efficiently in many regions around the world, the problem is that many people do not actually have access to those markets. Africa is a superb example of this issue: The continent could easily realize their right to food and end hunger if farmers had an efficient way to get produce across borders (World Bank, 2012). The transportation is so poor in Africa that many individuals are not able to self-sufficiently feed themselves. Their perpetual lack of development is seriously hindering economic growth, and many regions of Africa remain dependent on foreign aid as a result. Intra-regional trade makes up a mere 13% of total commerce, compared to 53% in emerging Asian markets. The landlocked countries of Africa are particularly hard hit; transport costs alone account for 50 to 75% of the retail cost of products in Rwanda, Uganda, and Malawi (Halfa, 2013). Changing this trend would advance food security and growth. For Africa to reach its potential in regional

food trade, regulatory barriers in competition and trade along the value chain must be removed. Africa also needs to invest in its ability to make staple markets efficient and stable, and they can do this by building and reforming institutions (World Bank, 2012).

The World Bank (2012) makes the important point that it is political economy issues that constrain the possibility for opening regional trade and thus lessening hunger. There are 276 million hungry people in the continent of Africa. If Africa could feed itself (which it should be able to, given its potential), there would be millions of people who could protect their right to food and minimize global obligations. For this to happen, two very important things must happen: The World Bank suggests “an inclusive dialogue on food trade reform informed by timely and accurate data on global, regional, and national markets” and “a reform strategy that provides a clear transitional path to integrated regional markets rather than a single but politically unfeasible jump to competitive markets” (World Bank, 2012, p. xv).

Gender Gaps in Agriculture

Agriculture is underperforming in many developing countries due to widespread gender gaps. Women, in general, lack the opportunities and resources they need to make the most productive use of their limited time. Almost everywhere in the world, women face more issues than men regarding access to productive markets, services, and resources. This gap causes women to fall behind in productivity, hinders their ability to achieve broader social and economic development goals, and reduces their ability to contribute to agriculture at the same level as men (Food and Agriculture Organization of the United Nations, 2011). Not only would the closure of this gender gap produce significant social benefits, but societal gains would include an increase in agricultural productivity, which in turn would reduce hunger and poverty while promoting economic growth.

While states, donors, and development practitioners are now realizing how vital agriculture is to food security and economic development, these actors are still failing to obtain the gender equality in agriculture that could support their goals. The international community rarely discusses why there is a difference in resources accessible to women and men, what kinds of constraints and roles these genders are facing, and how these differences are germane to the development of agriculture and thus the realization of the right to food (Food and Agriculture Organization of the United Nations, 2011). Developments in the areas of infrastructure, market access, and technology are often assumed to have the same and equal impacts on men and women, which is not the case. Women face more social and legal barriers that hinder their ability to benefit or even adapt to this change. Governments would certainly maximize their efforts in increasing agricultural yield if they maximized the productive potential of females. The goal of discussing and examining gender gaps is to realize that gender equality will lead to helping realize the right to food.

Women make up about 43% of the agricultural labor force. In Latin America, this percentage hovers around 20%, while Eastern Asia, Southeast Asia, and sub-Saharan Africa are at 50%. Of course, each of these regions has ranges within specific areas. For instance, in Cote d'Ivoire women make up 36% of agricultural workers compared to 60% in Mozambique, Sierra Leone, and Lesotho. China's women agricultural workers make up about 48% of that labor force, while India has remained steady at 30%. Other countries, such as Pakistan, have nearly tripled their female agricultural work force since the 1980s (they are currently at 30%). These statistics show that women in agriculture are an important group to consider because their work has an incredible global impact. Factors such as what crop is being used, the phase of the crops' growth/production cycle, the ethnic group and age of the women working, the type of agricultural activity they undertake, and other variables are all factors that are not being studied enough. Since these issues may impair women's potential to agriculturally produce as much as men, it is imperative that researchers turn their attention to these questions. All of these under-studied

areas could offer policy-related data about how, when, and where to implement interventions aimed towards supporting female agriculture workers. According to a Food and Agriculture Organization (2011) report, “studies that consider geographic and cultural context can provide practical guidance for policy-makers and practitioners involved in technology investments, extension services, post-harvest activities and marketing interventions” (p. 13).

For instance, there is significant evidence to show that women farmers are generally excluded from modern contract farming. Women often have an insufficient amount of family labor, which is needed to guarantee delivery of steady flow of produce, as well as the ability to secure control of land. Contract farming is an important economic practice; having a contract with large-scale agro-processing firms helps farmers overcome transaction costs and technical barriers associated with meeting the strict demands of metropolitan consumers. In China, women do the bulk of the work for contract deals, but are not the ones signing the contract; they are thus not reaping the benefits and remain poorly compensated. Agriculture is undoubtedly the most significant source of employment for females in rural regions in most developing states, and even when women are more qualified than men they are paid less (Food and Agriculture Organization of the United Nations, 2011).

Fully understanding the gender gap is critical because female farmers are absolutely as efficient as male farmers, but they are lacking the resources to produce as much as men are. In developing countries where data was collected, between 10 and 20% of landowners are women. It is widely shown that women-operated farms are smaller than male-run farms. While in some countries the difference was negligible, some female-run farms are only half to two-thirds the size of male-run farms (Food and Agriculture Organization of the United Nations, 2011). Closing this gender gap would open the door for increased female productivity, which could lead to an increased agricultural output in the developing world by 2.5 to 4%. This increase has the potential to diminish the number of undernourished people by 12 to 17%, which represents an important step for achieving the right to food. The connection between

gender equality and the reduction of hunger are pretty clear (Food and Agriculture Organization of the United Nations, 2011). When the world starts to make gender-conscious agricultural decisions, we will see a tremendous leap in production of crops. Under-utilizing the world's female workforce is hindering the realization of the right to food.

Examples of Opportunities

Realizing the right to food will take creative and multi-faceted approaches. It is critically important to consider the impact of partnerships and collaborations on efforts to achieve the right to food. The duty of the state to be the protector and provider of rights is a heavy burden, and that is why partnerships are so effective in helping realize the right to food. Many states have had beneficial experiences with partnering with the World Food Programme (WFP), the online community, and public-private collaborations. First, it is paramount to recognize the strides that the WFP has made in trying to uphold the right to food. They have utilized creative collaborations with governments, as well as individual communities to better understand what strategies work best. The implementation of food banks, for instance, has allowed the WFP to create sustainable relationships in areas where the need for food fluctuates season to season, like in the Horn of Africa. The WFP and the African Union launched the African Risk Capacity initiative, a multi-partner drought insurance fund that facilitated the use of food banks. Where food banks have already been actualized, the need for aid virtually disappeared. The concept is simple: take one year's worth of food aid and put it into a warehouse. The community controls that food and uses it when necessary, but they are obliged to replace the food with interest. By adding in 5-10% more food every harvest season, these communities are transforming the model for food aid and the right to food. Cameroon has had particular success with this, and they are an encouraging example of the promise of such partnerships (United Nations World Food Programme, 2012).

The use of the Internet and corporate partnerships have been useful tools for promoting and protecting the right to food. Online fundraising through the WFP raised \$11.9 million in 2011. The WFP has had great success in securing new supporters and partners via the Internet, including major corporations. LG Electronics (LGE), for example, has donated \$6 million for the funding of school meals, health education, and income-generating activities. So far LGE has collaborated with Ethiopia, Kenya, Bangladesh, and Cambodia. LGE endorses WFP school meals targeting 8,000 children in Kenya's city of Nairobi, as well as funds programs such as food-for-work and food-for-assets endeavors that help communities boost infrastructure, farming, and climate-change mitigation in Bangladesh and Cambodia. PepsiCo has been another valuable company partnership. PepsiCo is helping to build processing capabilities for the development of local chickpea meal supplements in Ethiopia. By building local infrastructure, PepsiCo has helped cut costs and build up the country's capacity (United Nations World Food Programme, 2012). It is impossible to ignore the positive effects of partnerships between states, the WFP, and other agencies. Reaching out to and working with the global community is key to achieving the right to food.

Some argue that states have the duty not only to directly protect the right to food, but to also harness the power of influential actors to promote food rights. A global regulatory system that has the capability to hold transnational corporations accountable for helping achieve the right to food needs to be put into place, for instance. The power of transnational corporations is rather preposterous; 51 of the world's biggest economies are transnational corporations (TNCs). The company Nestlé boasts that there is not a single country in the world where their products aren't sold, and they have the largest share of the baby food market. Cargill, a U.S. corporation, controls 45% of the world's grain trade. Colossal power in the food supply chain is held by a small number of companies, and for this reason they must be held partially responsible for the right to food. It is also quite easy to demonstrate what these TNCs could do to help. For every one U.S. dollar that is spent by the World Health Organization in hopes of improving

the nutrition of the world's population, \$500 is spent by corporations on advertising for a food product. The food industry's \$40 billion advertising budget in 2001 was greater than the GDP of 70% of the world's states (Kent, 2008). Even a slight reallocation of those advertising funds towards achieving the right to food would be monumentally helpful. Due to the ever-increasing influence of TNCs and their immense impact on the right to food, it is absolutely necessary that corporations are regulated and held responsible for food rights. Past attempts at monitoring business interests at the international level have not succeeded, even when proposed by the UN Centre on Transnational Corporations. There is an urgent need for the world's governments to come together and respond to the expansion in the size and power of companies. Corporations economically challenge the power of states, and too often disregard the right to food. Regulation of TNCs would significantly reduce the troubles of achieving the global right to food.

It is also important for the international community to keep children in mind when considering the human right to food. Children are particularly vulnerable to hunger and chronic malnutrition, and it is children who are arguably the most important ones to keep fed. It is estimated that 146 million children in developing countries are underweight due to chronic or acute hunger (United Nations World Food Programme, 2013). Unfairly, child hunger is often inherited; every year up to 17 million children are born underweight because their mothers did not have adequate nutrition during pregnancy. An intergenerational cycle of chronic hunger perpetuates suffering, and interventions at the pregnant/breastfeeding stages reap the most sustainable benefits. Preventing deaths related to malnutrition and chronic hunger is a great challenge because these factors are responsible for not only high mortality rates, but they also inherently hinder developmental prospects for certain communities and countries (United Nations World Food Programme, 2008). There are several reasons that focusing on children when talking about the right to food is especially important. First, if a child does not have adequate nutrition in its first 1,000 days of life – from conception to two years old – the damage is

irreversible. Second, providing school meals has a myriad of positive ripple effects on economic and community development. School feeding, through local purchases of food, promotes sustainable development by maintaining reliable markets for local producers and small farmers. School feeding programs are key to long-term and sustainable solutions to hunger due to their influence on education levels (United Nations World Food Programme, 2008). The World Food Programme has had relative success in reducing child hunger. In 2011, an overall 63.2 million children were assisted in WFP operations. Approximately 23.2 million school children received meals and/or take-home rations, and 11.1 million malnourished children were given specialized nutritional support (United Nations World Food Programme, 2012).

Several examples from around the world highlight positive solutions for eliminating (or reducing) child hunger. Brazil is a snapshot of success in the realization of the right to food, particularly related to its progress with school meal programs. The country's ten-year development push "Zero Hunger" has lifted 25 million Brazilians out of poverty. Even more impressive is that 47 million children are receiving school meals. This progress was accomplished with the help of the WFP's Centre of Excellence against Hunger. The Centre "aims to leverage Brazil's success to other nations seeking to end hunger and malnutrition – and in the process become a global reference point on school meals, nutrition, and food security" (United Nations World Food Programme, 2012, p. 35). This success has indeed reached other nations. Honduras, a country where one in four children is afflicted with chronic malnutrition, made a commitment to provide school meals to 1.4 million primary school children. The government is financing 80% of school meals, and the rest is financed by the Canadian government, private donations, and the WFP. Most of the food is locally grown, with more than a third of the raw ingredients supplied by small farmers (United Nations World Food Programme, 2012). It is these kinds of innovative, collaborative successes that demonstrate the importance of creating long-term solutions in order to achieve the global right to food. Providing school meals paints a clear picture of a beneficial

loop: Children get fed at school, which encourages them to stay in school, which heightens the chance of these children turning into contributing adults to their country's economy, and a strong economy will continue to provide for school children's meals. What makes the implementation of school feeding programs so incredibly reasonable is the minimal cost: The WFP spends an average of just 19 cents per child per day (Kent, 2008). If there is one obligation that should not be neglected, it is school feeding.

The WFP has also made strides in providing ready-to-use food supplements as a way to combat hunger. Approximately 3.2 million critical (under-two age group) children were helped in 2011, largely thanks to ready-to-use packets. This is a grand achievement, considering that the WFP was only able to reach 55,000 critical children in 2008. There are several types of these packets being distributed, including nutrient-packed supplementary foods, micronutrient powders, and fortified blended mixes of corn, wheat, and soya. What is most important is that these products are created with the long-term goal of the right to food in mind. Pakistan hosts production of locally produced chickpea-based food. Myanmar Mix uses fortified super cereal products, all made with local raw ingredients. Afghanistan is producing a fortified nut paste made from their key cash crop of almonds (United Nations World Food Programme, 2012). Producing these different food supplements locally is far cheaper than importing them and that translates into distributing more for less money. Not only are more children getting fed, but manufacturing local products creates stronger markets and revives local agriculture. Foreign humanitarian aid donors are catching on to the importance of the fortified packets as well. American companies are making ready-to-use therapeutic food to reverse malnutrition. These packets are ingenious in that they do not need to be reconstituted, which avoids the issue of unclean water, and they virtually keep forever. They are highly concentrated, making it easy and cheap to ship packets, meaning this valuable product will reach more children in need (Rosenberg, 2013).

Productive methods of agriculture represent another fundamental building block toward the realization of the right to food. There is an excellent case to be made that genetically modified (GMO) or

engineered crops are a solution for achieving the right to food because traditional processes of crop breeding are insufficient to meet the demands of rapidly growing populations. Many scientists say that it will be the combination of genetic engineering and enhanced plant breeding that ensures future food security. Some scholars argue that “genetic engineering has the potential to produce improved varieties in terms of quality and yield traits, more quickly than traditional breeding” (Khan et al., 2012, p. 6). The science behind GMOs has the ability to fortify crops with key nutrients that are lacking in most developing countries. Golden rice has been genetically modified to contain more vitamin A, for instance. Vitamin A deficiency is deadly, killing around two million people every year (McKie, 2013). Recent tests show that by eating only 60g of cooked golden rice, substantial amounts of vitamin A were absorbed. Similar crop modifications have arisen since; the golden banana fortified with vitamin A (and soon to be iron) was created with the hopes of diminishing malnutrition in countries like Uganda, where the fruit is a staple (McKie, 2013). GMOs do more than fortify crops with nutrients, though. For example, hybrid maize developed by Monsanto has significantly increased crop yields (Tran, 2013).

While some tout the necessity of GMOs to help solve world hunger, critics claim that GMOs are only a short-term (and possibly hazardous) solution. One of the most prevalent complaints is that the nature of the industry calls into question whether farmers would even be able to afford genetically-modified seeds. The leaders in developing genetically modified crops are companies like Monsanto and Syngenta, and they hold patents (and can charge high prices) for the seeds they engineer. However, some GM crops (like golden rice) have actually been developed in partnership with the Bill and Melinda Gates Foundation in an effort to alleviate malnutrition and poverty in the developing world (McKie, 2013). Yet golden rice has yet to be approved for distribution, despite its development in 1999, due to delays caused (in part) by organizations such as Greenpeace. These critics worry that GMOs have not yet been proven safe and their benefits do not outweigh their risks. These criticisms are countered by people such as Mark Lynas, an environmental activist who previously discouraged GMOs, who now

contends that organizations like Greenpeace are denying the needy and hungry vital resources. The ability to fortify crops with more nutrients would greatly reduce malnutrition, and modified crops that produce more yields and withstand harsher conditions would make an enormous impact in the world's food supply. However, the proponents argue that the full potential of GMOs is not being realized due to "the aesthetic preference of rich people far away" (McKie, 2013). Realizing the right to food is going to take an open mind and varied techniques; embracing the science of GMOs is necessary.

While GMOs are an important possibility, India provides a good example of how crop yield can be increased without the controversy of engineered seeds. India is going through a "rice revolution," which started when an organic farmer produced a world record 22.4 tons of rice on one hectare of land. Rice is a staple food for more than 50% of the world population, so clearly this record-breaking feat attracted attention. But rice is not the only crop that can have this kind of organic success; the world record for potato size was broken using the same organic farming method. These "super yields" are due to System of Rice (or Root) Intensification (SRI). Wheat, sugar cane, yams, garlic, tomatoes, eggplant, rice, and potatoes have all showed dramatic yield increases when planted using SRI. SRI has been called one of the most significant developments in farming in the past 50 years for the 500 million small-scale farmers of the world – and the two billion people they are feeding. Farmers using SRI use fewer chemicals, less water, and less seeds, yet they get more yields without more investment. While it was the green revolution that prevented the Indian famine in the 1970s, SRI is looking like a more long-term and sustainable option at no significant extra cost. With the demand for rice possibly outstripping supply within 20 years, SRI is a very sustainable and eco-friendly option to continue to feed the hungry. A mere 30% increase in yield in the product of the world's smallest farmers would make drastic measures in alleviating hunger. For a small investment (training a couple hundred people in the method of SRI), a 45% yield increase was reported in India (Vidal, 2013). This simple system has the possibility of revolutionizing small farmers and making great steps in achieving the right to food.

Experts in SRI are trying to spread the word that this technique could be revolutionary for small-scale farmers, but not necessarily for large operations. Nevertheless, SRI is an efficient technique that is not being utilized to the full extent. It is indeed labor intensive, but its cost and risk are trivial compared to the results it can produce. Approximately 4-5 million farmers worldwide are now employing SRI. The governments of China, Indonesia, India, Cambodia, Vietnam, and Sri Lanka are now promoting the method and pushing for it to be integrated into their own small farms. The small provinces in India are being hailed as the center of a “new green grassroots revolution,” and the state has said next year \$50 million will be invested in SRI practices. Western governments are more hesitant, preferring for now to stick to investing in high-tech agriculture research, but the increased yields from SRI speak for themselves. Governments everywhere should be wholly promoting SRI within their small farming communities. The fact that a farming technique is guaranteeing almost a 50% increase in yield and yet is not being utilized worldwide is wasteful. The dichotomy of GMOs side-by-side with SRI demonstrates exactly the importance of a multi-faced approach to achieving the right to food.

Recommendations and Conclusions

This research paper argues that the only way to solve world hunger is to look at different and creative solutions, and the modernization of food aid certainly requires varying and innovative techniques. The traditional model for food aid is often inefficient and detrimental to the realization of the right to food, and the American method is in need for particular work. Traditional food aid constitutes the shipment of food staples to areas in need, and of course this technique is still useful and necessary in some situations. However, out-of-the-box food aid (like protein-rich powders) has proven successful in most cases of helping the hungry. Each case of hunger is issue and area specific, and these problems require attention to varying solutions and methods. The WFP points out the importance of modernizing food aid, and their strategic plan “marks a historical shift from WFP as a food agency to

WFP as a food assistance agency, with a more nuanced and robust set of tools to respond to critical hunger needs” (United Nations World Food Programme, 2008, p. 1). The ultimate goal is to reduce dependency and to support global and governmental efforts to establish long-term solutions for the realization of the right to food.

One approach is replacing physical food being sent to hungry areas (disaster areas in particular) with money. When the Indian Ocean tsunami hit in 2004, the Acehnese people were particularly affected. While the coast was devastated, inland life was relatively normal; harvests had been exceptional and there was plenty of food to be bought. However, massive food shipments were airlifted in as part of a global humanitarian response. These bags of food and sacks of rice threw off the relatively stable food market in Aceh. Local markets could no longer sell rice due to the amount of people who were getting it for free. Local farmers were threatened and the supply chain deteriorated (Rosenberg, 2013). Oxfam America recognized that shipping in food was doing more harm than good, and decided to take a new approach. The aid organizations that were working in Aceh started to buy local food and distribute that instead. Cash and vouchers were given out so people could go to the market and buy food there. Meanwhile, organizations like Mercy Corps paid locals to clean up debris and the Swiss Development Corporation gave out cash grants to families hosting the displaced. Providing money instead of food was not a new idea – it had happened successfully on smaller scale projects – and the case of Aceh proved it could work on a larger scale. The technique was smart in so many ways; the local food provided better nutrition and made the residents happier, it was far cheaper than shipping in food, and households who received cash proved they could spend it wisely under the supervision of joint decision makers (Rosenberg, 2013). In these sorts of cases, the use of traditional food aid needs to be reevaluated.

The United States is a country that needs particular work toward modernizing food aid. While the Obama administration has suggested giving America more flexibility, not enough progress has been

made. Every major supplier of humanitarian aid has flexibility in what form of aid they will send according to the situation. They can buy food in the affected area, send food, or provide vouchers and cash. Quite ironically, the largest supplier of humanitarian aid does not enjoy this flexibility. The United States is tied to sending food that was produced within its borders. A mere 15% of U.S. food aid can be bought outside of the country (Rosenberg, 2013). It has been repeatedly shown that the current approach to food aid can sometimes become a hindrance to the original mission, and American food aid is no exception. U.S. food aid is, on the whole, inefficient and slow. In a telling Government Accountability Office report, it was shown that in 2009 food bought locally in Sub-Saharan Africa by the WFP not only cost 34% less than American food aid, but it arrived 100 days faster (Rosenberg, 2013). Half of the cost of U.S. food aid comes from ocean shipments of food. If the U.S. were to increase the percentage of untied food aid from 15% to 45%, as recently proposed in a 2014 budget proposal, the U.S. would be able to feed four million more people at no extra cost (Rosenberg, 2013). America desperately needs to upgrade its approach to food aid.

Furthermore, it is important to realize that sending food creates a cycle of need that is not conducive to achieving the right to food. Traditional food aid is often harmful, and it is critical that global humanitarians recognize that this model has its place but should by no means be considered the norm. Haiti – one of the world’s most perpetually hungry countries – is still hungry years after a devastating earthquake largely due to highly subsidized and even free imported rice. This imported rice destroyed local rice production, since farmers could not compete with the low prices. Even when the president of Haiti asked the international community to stop rice shipments, the United States continued providing traditional food aid. The government of Haiti asserts that the economy must recover so that jobs can be created, but that this is impossible with continued food aid (Rosenberg, 2013).

These harmful effects of American food aid are tied to the original goals of the 1954 Agricultural Trade Development and Assistance Act, which focused not on feeding the hungry but rather keeping

American crop prices high while ridding the country of agricultural surplus. This food program was designed to deal with commodity surplus, which in American is a problem of the past. Yet the rules of this initial program still exist today, which hurts the United States' ability to contribute to the global right to food. According to the U.S. Agency for International Development (USAID), the cost to transport food has tripled in 10 years and food prices are still at near-record or record highs. A decade ago, America shipped 5.5 million metric tons of food. Today it ships 1.8 million (Rosenberg, 2013). The potential for change cannot be stressed enough; consider the impact on the right to food if the largest humanitarian aid donor became more efficient and promoted the modernization of food aid.

New institutional organizations are also needed for the global governance of agriculture and food, especially as it concerns the right to food. It is up to the international community to come up with elements for global governance of food and agriculture (Kent, 2008). Currently, it is the United Nations and its relative agencies doing this job. The global community has no problem taking responsibility for issues regarding security, and they should therefore have no problem taking responsibility when it comes to issues like malnutrition and hunger. It is important to note that the International Covenant on Economic, Social, and Cultural Rights (ICESCR) creates global duties right beside national obligations, and Article 2 claims that states need to act individually and "through international assistance and co-operation, especially economic and technical" in order to achieve the progressive realization of the rights in question (United Nations, 1966).

A widely recognized example of the progressive realization for the right to food (along with other economic, social, and cultural rights) is the duty of richer states to assist poorer states. However, the ICESCR fails to define any kind of level of involvement the rich states have to commit to. The fact that states can decide how little or how much they contribute is problematic. States can simply say their participation in multilateral development or bilateral cooperation is enough of a contribution. Since 1970, the global community has said that the amount wealthy nations should contribute to

developmental assistance is at minimum 0.7% of their national income. Not once since 1970 have the collective 80 member states given more than half of the recommended 0.7% to developmental assistance programs (Kent, 2008). The failure of the global community to willingly commit to donating even a slight percentage of their national income shows the incredible need for the individual people to work collectively through their states in the hopes of creating a more binding recognition of state obligations. As discussed earlier in the paper, lack of development is a reason why the right to food is not yet realized. If states were legally obliged to donate even that reasonable 0.7% of their national income to development programs, hunger and other world problems would be greatly alleviated. Fortunately, there is a general movement towards the desire for states to cooperate with the advancement of human rights, but this general movement needs to be solidified. For instance, state obligations should be clarified by the UN Committee on Economic, Social, and Cultural Rights. It should then be the responsibility of the UN Committee to ensure that the member states are indeed following their global obligations. It would be beneficial if civil society reported to the UN Committee on how their state was obliging to help achieve the right to food (Kent, 2008).

Throughout this paper, the responsibility for pursuing creative opportunities to protect the right to food was laid solely on governments and programs like the WFP. This final recommendation for a more solidified global governance places responsibility on a different party: a more unified global community. It is time for the right to food to be fully realized, but it cannot be done without the participation of all communities – states, NGOs, transnational corporations, small farmers, engineers of GMOs, and individuals collaborating through their respective governments. The right to food can and will be an attainable human right with the implementation of multi-faceted solutions and unified global community.

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