

SPECIAL COMMITTEE



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Topic: Combating Food Insecurity

Introduction to the topic

Food security is a measure of the availability of food and individuals' ability to access it. Affordability is only one factor. There is evidence of food security being a concern many thousands of years ago, with central authorities in ancient China and ancient Egypt being known to release food from storage in times of famine. At the 1974 World Food Conference the term "food security" was defined with an emphasis on supply. They said food security is the "availability at all times of adequate, nourishing, diverse, balanced and moderate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices". Later definitions added demand and access issues to the definition. The final report of the 1996 World Food Summit states that food security "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

The number and the proportion of undernourished people have declined, but they remain unacceptably high. After increasing from 2006 to 2009 due to high food prices and the global economic crisis, both the number and proportion of hungry people have declined in 2010 as the global economy recovers and food prices remain below their peak levels. But hunger remains higher than before the crises, making it ever more difficult to achieve the hunger-reduction targets of the World Food Summit and Millennium Development Goal 1. Countries in protracted crisis require special attention.

They are characterized by long-lasting or recurring crises and often limited or little capacity to respond, exacerbating food insecurity problems in those countries. Appropriate responses thus differ from those required in short-term crises or in non-crisis development contexts.

Improving food security in protracted crises requires going beyond short-term responses in order to protect and promote people's livelihoods over the longer term. People living in protracted crises are often forced to make radical adjustments in their way of life that require longer-term responses. This disruption to traditional livelihoods and coping mechanisms also has very different implications for men and for women.

Supporting institutions is key to addressing protracted crises. Protracted crises, whether human-induced or the result of repeated natural disasters, often undermine the institutions that are

necessary to contain and recover from crises. Local institutions often remain or emerge to fill crucial gaps when national institutions have failed, and these have the potential to play a key role in addressing protracted crises, but they are often ignored by external actors.

Agriculture and the rural economy are key sectors for supporting livelihoods in protracted crises, but they are not properly reflected in aid flows. Agricultural and rural-based livelihoods are critical to the groups most affected by protracted crises. Agriculture accounts for a third of protracted crisis countries' gross domestic product and two-thirds of their employment. Yet agriculture accounts for only 4 percent of humanitarian ODA received by countries in protracted crisis and 3 percent of development ODA.

The current aid architecture needs to be modified to better address both immediate needs and the structural causes of protracted crises. The current system uses humanitarian assistance to support short-term efforts to address the immediate effects of a crisis, and development assistance for long-term interventions to address underlying causes. Areas of intervention that are important in protracted crises (including social protection and risk reduction) are often underfunded. In general, weak governance structures in protracted crisis situations condition aid allocations.

Food assistance helps build the basis for long-term food security, and is particularly important in countries in protracted crisis.

Humanitarian food assistance not only saves lives, but is also an investment in a country's future, because it preserves and strengthens the human assets and livelihoods that are the foundation of future stability and development. The use of a varied set of food assistance tools (such as food, cash or vouchers), complemented by innovations in how food is procured (including local purchase), helps to ensure that appropriate assistance is provided and to maximise the chance that humanitarian food assistance will serve as a strong basis for food security in the longer term.

Broader social protection measures help countries cope with protracted crises and lay the foundation for long-term recovery. Key interventions include providing safety nets, insurance when appropriate, and services such as health and education, which build bridges to longer-term development. In countries in protracted crisis, however, financial, institutional and implementation capacity

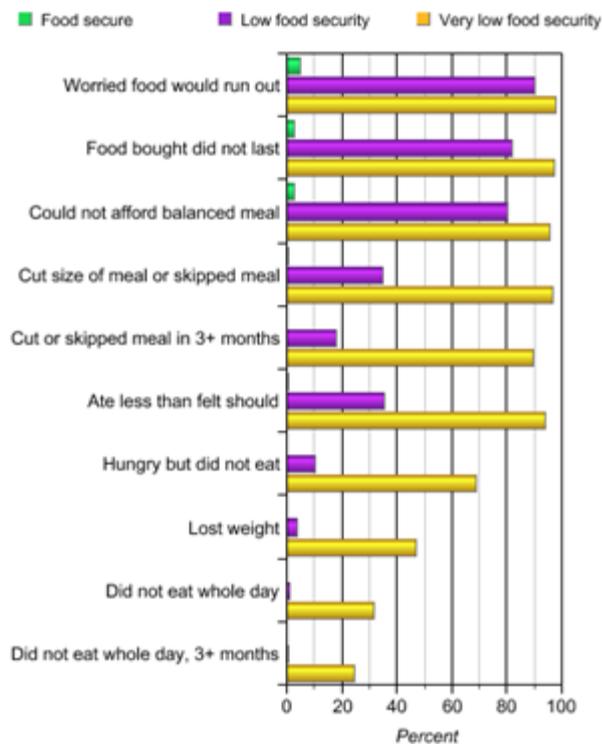
are limited, so social protection programmes are generally short-term, relief-oriented and externally funded.

The defining characteristic of very low food security is that, at times during the year, the food intake of household members is reduced and their normal eating patterns are disrupted because the household lacks money and other resources for food. Very low food security can be characterised in terms of the conditions that households in this category typically report in the annual food security survey.

- 98 percent reported having worried that their food would run out before they got money to buy more.
- 97 percent reported that the food they bought just did not last, and they did not have money to get more.
- 96 percent reported that they could not afford to eat balanced meals.
- 97 percent reported that an adult had cut the size of meals or skipped meals because there was not enough money for food.
- 90 percent reported that this had occurred in 3 or more months.
- 94 percent of respondents reported that they had eaten less than they felt they should because there was not enough money for food.
- 69 percent of respondents reported that they had been hungry but did not eat because they could not afford enough food.
- 47 percent of respondents reported having lost weight because they did not have enough money for food.
- 32 percent reported that an adult did not eat for a whole day because there was not enough money for food.
- 25 percent reported that this had occurred in 3 or more months.

- All households without children that were classified as having very low food security reported at least six of these conditions, and 70 percent reported seven or more. Food-insecure pattern

Percentage of households reporting indicators of adult food insecurity, by food security status, 2018



Source: USDA, Economic Research Service, using data from the December 2018 Current Population Survey Food Security Supplement.

Key terms

Low food security (old label=Food insecurity without hunger): reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.

Very low food security (old label=Food insecurity with hunger): Reports of multiple indications of disrupted eating patterns and reduced food intake.

Agriculture: Agriculture involves the use of water for crop spraying, irrigation, livestock watering, poultry operations and other farm purposes not related to human consumption

Nutrition: The organic process by which an organism assimilates food and uses it for growth and maintenance

Malnutrition: ill health caused by an insufficient or poorly balanced diet or faulty digestion or use of foods

Risks to food security

Population growth

A family planning placard in Ethiopia. It shows some negative effects of having too many children.

Current UN projections show a continued increase in population in the future (but a steady decline in the population growth rate), with the global population expected to reach 9.8 billion in 2050 and 11.2 billion by 2100. Estimates by the UN Population Division for the year 2150 range between 3.2 and 24.8 billion; mathematical modeling supports the lower estimate. Some analysts have questioned the sustainability of further world population growth, highlighting the growing pressures on the environment, global food supplies, and energy resources. Solutions for feeding the extra billions in the future are being studied and documented. One out of every seven people on the planet go to sleep hungry. Areas are subject to overpopulation, and 25,000 people die of malnutrition and hunger related diseases every day.

Fossil fuel dependence

While agricultural output has increased, energy consumption to produce a crop has also increased at a greater rate, so that the ratio of crops produced to energy input has decreased over time. Green Revolution techniques also heavily rely on chemical fertilizers, pesticides and herbicides, many of which are petroleum products, making agriculture increasingly reliant on petroleum.

Between 1950 and 1984, as the Green Revolution transformed agriculture around the globe, world grain production increased by 250%. The energy for the Green Revolution was provided by fossil fuels in the form of fertilizers (natural gas), pesticides (oil), and hydrocarbon fuelled irrigation.

David Pimentel, professor of ecology and agriculture at Cornell University, and Mario Giampietro, senior researcher at the National Research Institute on Food and Nutrition (NRIFN), place in their study *Food, Land, Population and the U.S. Economy* the maximum U.S. population for a sustainable economy at 210 million. The study says that to achieve a sustainable economy and avert disaster, the United States must reduce its population by at least one-third, and world population will have to be reduced by two-thirds. The authors of the study believe that the mentioned agricultural crisis will only begin to affect us after 2020, and will not become critical until 2050. The oncoming peaking of global oil production (and subsequent decline of production), along with the peak of North American natural gas production will very likely precipitate this agricultural crisis much sooner than expected. Geologist Dale Allen Pfeiffer claims that coming decades could see spiralling food prices without relief and massive starvation on a global level such as never experienced before.

Homogeneity in the global food supply

A small number of major crops, e.g. Soybean, have formed an increasing share of the food energy, protein, fat, and food weight eaten by the world's population over the past 50 years. Since 1961, human diets across the world have become more diverse in the consumption of major commodity staple crops, with a corollary decline in consumption of local or regionally important crops, and thus have become more homogeneous globally. The differences between the foods eaten in different countries were reduced by 68% between 1961 and 2009. The modern "global standard" diet contains an increasingly large percentage of a relatively small number of major staple commodity crops, which have increased substantially in the share of the total food energy (calories), protein, fat, and food weight that they provide to the world's human population, including wheat, rice, sugar, maize, soybean (by +284%), palm oil (by +173%), and sunflower (by +246%^[110]). Whereas nations used to consume greater proportions of locally or regionally important crops, wheat has become a staple in over 97% of countries, with the other global staples showing similar dominance worldwide. Other crops have declined sharply over the same period, including rye, yam, sweet potato (by -45%), cassava (by -38%), coconut, sorghum (by -52%) and millets (by

–45%). Such crop diversity change in the human diet is associated with mixed effects on food security, improving under-nutrition in some regions but contributing to the diet-related diseases caused by over-consumption of macronutrients.

Price setting

On April 30, 2008, Thailand, one of the world's biggest rice exporters, announced the creation of the Organisation of Rice Exporting Countries with the potential to develop into a price-fixing cartel for rice. It is a project to organize 21 rice exporting countries to create a homonymous organisation to control the price of rice. The group is mainly made up of Thailand, Vietnam, Cambodia, Laos and Myanmar. The organization attempts to serve the purpose of making a "contribution to ensuring food stability, not just in an individual country but also to address food shortages in the region and the world". However, it is still questionable whether this organization will serve its role as an effective rice price fixing cartel, that is similar to OPEC's mechanism for managing petroleum. Economic analysts and traders said the proposal would go nowhere because of the inability of governments to cooperate with each other and control farmers' output. Moreover, countries that are involved expressed their concern that this could only worsen the food security.

Land use change

China needs not less than 120 million hectares of arable land for its food security. China has reported a surplus of 15 million hectares. By contrast, some 4 million hectares of conversion to urban use and 3 million hectares of contaminated land have also been reported. A survey found that 2.5% of China's arable land is too contaminated to grow food without harm. In Europe, the conversion of agricultural soil implied a net loss of potential, but the rapid loss in the area of arable soils appears to be economically meaningless because EU is perceived to be dependent on internal food supply anymore. During the period 2000–2006, the European Union lost 0.27% of its cropland and 0.26% of its crop productive potential. The loss of agricultural land during the same time was the highest in the Netherlands, which lost 1.57% of its crop production potential within six years. The figures are quite alarming for Cyprus (0.84%), Ireland (0.77%) and Spain (0.49%) as well.[118] In Italy, in the Emilia-Romagna plain (ERP), the conversion of 15,000 hectare of

agricultural soil (period 2003-2008) implied a net loss of 109,000 Mg per year of wheat, which accounts for the calories needed by 14% of ERP population (425,000 people). Such a loss in wheat production is just 0.02% of gross domestic product (GDP) of the Emilia-Romagna region, which is actually a minor effect in financial terms. Additionally, the income from the new land use is often much higher than the one guaranteed by agriculture, as in the case of urbanisation or extraction of raw materials.

Global catastrophic risks

Further information: Global catastrophic risk

As anthropogenic greenhouse gas emissions reduce the stability of the global climate, abrupt climate change could become more intense. The impact of an asteroid or comet larger than about 1 km diameter has the potential to block the sun globally, causing impact winter. Particles in the troposphere would quickly rain out, but particles in the stratosphere, especially sulfate, could remain there for years. Similarly, a super-volcanic eruption would reduce the potential of agricultural production from solar photosynthesis, causing volcanic winter. The Toba super volcanic eruption approximately 70,000 years ago may have nearly caused the extinction of humans (see Toba catastrophe theory). Again, primarily sulfate particles could block the sun for years. Solar blocking is not limited to natural causes as nuclear winter is also possible, which refers to the scenario involving widespread nuclear war and burning of cities that release soot into the stratosphere that would stay there for about 10 years. The high stratospheric temperatures produced by soot absorbing solar radiation would create near-global ozone hole conditions even for a regional nuclear conflict.

A sufficiently powerful geomagnetic storm could result in the sudden absence of access to electricity in large areas of the world. Because industrial farming is increasingly dependent on constant access to electricity, for example in precision livestock farming, a geomagnetic storm could potentially have had devastating effects to the food production.

Attempts to solve food insecurity

The World Summit on Food Insecurity

The World Summit on Food Security, held in Rome in 1996, aimed to renew a global commitment to the fight against hunger. The Food and Agriculture Organization of the United Nations (FAO) called the summit in response to widespread under-nutrition and growing concern about the capacity of agriculture to meet future food needs. The conference produced two key documents, the Rome Declaration on World Food Security and the World Food Summit Plan of Action. The Rome Declaration called for the members of the United Nations to work to halve the number of chronically undernourished people on the Earth by the year 2015. The Plan of Action set a number of targets for government and non-governmental organizations for achieving food security, at the individual, household, national, regional and global levels.

Another World Summit on Food Security took place at the FAO's headquarters in Rome between November 16 and 18, 2009. The decision to convene the summit was taken by the Council of FAO in June 2009, at the proposal of FAO Director-General Dr Jacques Diouf. Heads of state and government attended this summit.

By the United Nations

The UN Millennium Development Goals are one of the initiatives aimed at achieving food security in the world. The first Millennium Development Goal states that the UN "is to eradicate extreme hunger and poverty" by 2015. Olivier De Schutter, the UN Special Rapporteur on the Right to Food, advocates for a multidimensional approach to food security challenges. This approach emphasizes the physical availability of food; the social, economic and physical access people have to food; and the nutrition, safety and cultural appropriateness or adequacy of food.

By the Food and Agriculture Organization

The Food and Agriculture Organization of the United Nations stated in *The State of Food Insecurity in the World 2003* that countries that have reduced hunger often had rapid economic growth, specifically in their agricultural sectors. These countries were also characterized as having slower population growth, lower HIV rates, and higher rankings in the Human Development Index. At that time, the FAO considered addressing agriculture and population

growth vital to achieving food security. In *The State of Food Insecurity in the World 2012*, the FAO restated its focus on economic growth and agricultural growth to achieve food security and added a focus on the poor and on "nutrition-sensitive" growth. For example, economic growth should be used by governments to provide public services to benefit poor and hungry populations. The FAO also cited smallholders, including women, as groups that should be involved in agricultural growth to generate employment for the poor. For economic and agricultural growth to be "nutrition-sensitive", resources should be utilized to improve access to diverse diets for the poor as well as access to a safe water supply and to healthcare.

The FAO has proposed a "twin track" approach to fight food insecurity that combines sustainable development and short-term hunger relief. Development approaches include investing in rural markets and rural infrastructure. In general, the FAO proposes the use of public policies and programs that promote long-term economic growth that will benefit the poor. To obtain short-term food security, vouchers for seeds, fertilizer, or access to services could promote agricultural production. The use of conditional or unconditional food or cash transfers was another approach the FAO noted. Conditional transfers could include school feeding programs, while unconditional transfers could include general food distribution, emergency food aid or cash transfers. A third approach is the use of subsidies as safety nets to increase the purchasing power of households. The FAO stated that "approaches should be human rights-based, target the poor, promote gender equality, enhance long-term resilience and allow sustainable graduation out of poverty."

The FAO noted that some countries have been successful in fighting food insecurity and decreasing the number of people suffering from undernourishment. Bangladesh is an example of a country that has met the Millennium Development Goal hunger target. The FAO credited growth in agricultural productivity and macroeconomic stability for the rapid economic growth in the 1990s that resulted in an increase in food security. Irrigation systems were established through infrastructure development programs. Two programs, HarvestPlus and the Golden Rice Project, provided biofortified crops in order to decrease micronutrient deficiencies.

World Food Day was established on October 16, in honor of the date that the FAO was founded in 1945. On this day, the FAO hosts a variety of event at the headquarters in Rome and around the world, as well as seminars with UN officials.

By the World Food Programme

Fight Hunger: Walk the World campaign is a United Nations World Food Programme initiative.

The World Food Programme (WFP) is an agency of the United Nations that uses food aid to promote food security and eradicate hunger and poverty. In particular, the WFP provides food aid to refugees and to others experiencing food emergencies. It also seeks to improve nutrition and quality of life to the most vulnerable populations and promote self-reliance. An example of a WFP program is the "Food For Assets" program in which participants work on new infrastructure, or learn new skills, that will increase food security, in exchange for food. The WFP and the Government of Kenya have partnered in the Food For Assets program in hopes of increasing the resilience of communities to shocks.

Global partnerships to achieve food security and end hunger

In April 2012, the Food Assistance Convention was signed, the world's first legally binding international agreement on food aid. The May 2012 Copenhagen Consensus recommended that efforts to combat hunger and malnutrition should be the first priority for politicians and private sector philanthropists looking to maximize the effectiveness of aid spending. They put this ahead of other priorities, like the fight against malaria and AIDS.

The main global policy to reduce hunger and poverty are the recently approved Sustainable Development Goals. In particular Goal 2: Zero Hunger sets globally agreed targets to end hunger, achieve food security and improved nutrition and promote sustainable agriculture by 2030. A number of organizations have formed initiatives with the more ambitious goal to achieve this outcome in only 10 years, by 2025:

In 2013 Caritas International started a Caritas-wide initiative aimed at ending systemic hunger by 2025. The One human family, food for all campaign focuses on awareness raising, improving the effect of Caritas programs and advocating the implementation of the Right to Food.

The partnership Compact2025, led by IFPRI with the involvement of UN organisations, NGOs and private foundations develops and disseminates evidence-based advice to politicians and other decision-makers aimed at ending hunger and undernutrition in the coming 10 years, by 2025. It bases its claim that hunger can be ended by 2025 on a report by Shenggen Fan and Paul Polman that analyzed the experiences from China, Vietnam, Brazil and Thailand and concludes that eliminating hunger and undernutrition was possible by 2025.

In June 2015, the European Union and the Bill & Melinda Gates Foundation have launched a partnership to combat undernutrition especially in children. The program will initially be implemented in Bangladesh, Burundi, Ethiopia, Kenya, Laos and Niger and will help these countries to improve information and analysis about nutrition so they can develop effective national nutrition policies.

The Food and Agriculture Organization of the UN has created a partnership that will act through the African Union's CAADP framework aiming to end hunger in Africa by 2025. It includes different interventions including support for improved food production, a strengthening of social protection and integration of the Right to Food into national legislation.

By the United States Agency for International Development
The United States Agency for International Development (USAID) proposes several key steps to increasing agricultural productivity, which is in turn key to increasing rural income and reducing food insecurity. They include:

Boosting agricultural science and technology. Current agricultural yields are insufficient to feed the growing populations. Eventually, the rising agricultural productivity drives economic growth.

Securing property rights and access to finance

Enhancing human capital through education and improved health
Conflict prevention and resolution mechanisms and democracy and governance based on principles of accountability and transparency in public institutions and the rule of law are basic to reducing vulnerable members of society.

Since the 1960s, the U.S. has been implementing a food stamp program (now called the Supplemental Nutrition Assistance Program) to directly target consumers who lack the income to purchase food. According to Tim Josling, a Senior Fellow at the Freeman Spogli Institute for International Studies, Stanford University, food stamps or other methods of distribution of purchasing power directly to consumers might fit into the range of international programs under consideration to tackle food insecurity.

Improving agricultural productivity to benefit the rural poor

A farmer on the outskirts of Lilongwe (Malawi) prepares a field for planting.

There are strong, direct relationships between agricultural productivity, hunger, poverty, and sustainability. Three-quarters of the world's poor live in rural areas and make their living from agriculture. Hunger and child malnutrition are greater in these areas than in urban areas. Moreover, the higher the proportion of the rural population that obtains its income solely from subsistence farming (without the benefit of pro-poor technologies and access to markets), the higher the incidence of malnutrition. Therefore, improvements in agricultural productivity aimed at small-scale farmers will benefit the rural poor first. Food and feed crop demand is likely to double in the next 50 years, as the global population approaches nine billion. Growing sufficient food will require people to make changes such as increasing productivity in areas dependent on rainfed agriculture; improving soil fertility management; expanding cropped areas; investing in irrigation; conducting agricultural trade between countries; and reducing gross food demand by influencing diets and reducing post-harvest losses.

According to the Comprehensive Assessment of Water Management in Agriculture, a major study led by the International Water Management Institute (IWMI), managing rainwater and soil moisture more effectively, and using supplemental and small-scale irrigation, hold the key to helping the greatest number of poor people. It has called for a new era of water investments and policies for upgrading rainfed agriculture that would go beyond controlling field-level soil and water to bring new freshwater sources through

better local management of rainfall and runoff. Increased agricultural productivity enables farmers to grow more food, which translates into better diets and, under market conditions that offer a level playing field, into higher farm incomes. With more money, farmers are more likely to diversify production and grow higher-value crops, benefiting not only themselves but the economy as a whole.

It may be that an alliance between the emergency food program and community-supported agriculture is beneficial, as some countries' food stamps cannot be used at farmer's markets and places where food is less processed and grown locally. The gathering of wild food plants appears to be an efficient alternative method of subsistence in tropical countries, which may play a role in poverty alleviation.

Large-scale food stockpiling

The minimum annual global wheat storage is approximately two months. To counteract the severe food security issues caused by global catastrophic risks, years of food storage has been proposed. Though this could ameliorate smaller scale problems like regional conflict and drought, it would exacerbate current food insecurity by raising food prices.

Agricultural insurances

Insurance is a financial instrument, which allows exposed individuals to pool resources to spread their risk. They do so by contributing premium to an insurance fund, which will indemnify those who suffer insured loss. This procedure reduces the risk for an individual by spreading his/her risk among the multiple fund contributors. Insurance can be designed to protect many types of individuals and assets against single or multiple perils and buffer insured parties against sudden and dramatic income or asset loss.

Crop insurance is purchased by agricultural producers to protect themselves against either the loss of their crops due to natural disasters. Two type of insurances are available: claim-based insurances and index-based insurances. In particular, in poor countries facing food security problems, index-based insurances offer some advantages, including indices that can be derived from globally available satellite images that correlate well with what is insured. These indices can be delivered at low cost, and the

insurance products open up new markets that are not served by claim-based insurances.

An advantage of index-based insurance is that it can potentially be delivered at lower cost. A significant barrier that hinders uptake of claim-based insurance is the high transaction cost for searching for prospective policyholders, negotiating and administering contracts, verifying losses and determining payouts. Index insurance eliminates the loss verification step, thereby mitigating a significant transaction cost. A second advantage of index-based insurance is that, because it pays an indemnity based on the reading of an index rather than individual losses, it eliminates much of the fraud, moral hazard and adverse selection, which are common in classical claim-based insurance. A further advantage of index insurance is that payments based on a standardized and indisputable index also allow for a fast indemnity payment. The indemnity payment could be automated, further reducing transaction costs.

Basis risk is a major disadvantage of index-based insurance. It is the situation where an individual experiences a loss without receiving payment or vice versa. Basis risk is a direct result of the strength of the relation between the index that estimates the average loss by the insured group and the loss of insured assets by an individual. The weaker this relation the higher the basis risk. High basis risk undermines the willingness of potential clients to purchase insurance. It thus challenges insurance companies to design insurances such as to minimize basis risk.

Food Justice Movement

The Food Justice Movement has been seen as a unique and multifaceted movement with relevance to the issue of food security. It has been described as a movement about social-economic and political problems in connection to environmental justice, improved nutrition and health, and activism. Today, a growing number of individuals and minority groups are embracing the Food Justice due to the perceived increase in hunger within nations such as the United States as well as the amplified effect of food insecurity on many minority communities, particularly the Black and Latino communities.

A number of organizations have either championed the Food Justice Cause or greatly impacted the Food Justice space. An example of a prominent organization within the food justice movement has been the Coalition of Immokalee Workers, which is a worker-based human rights organization that has been recognized globally for its accomplishments in the areas of human trafficking, social responsibility and gender-based violence at work. The Coalition of Immoaklee Workers most prominent accomplishment related to the food justice space has been its part in implementing the Fair Food Program, which increased the pay and bettered working conditions of farm workers in the tomato industry who had been exploited for generations. This accomplishment provided over 30,000 workers more income and the ability to access better and more healthy foods for themselves and their families. Another organization in the food justice space is the Fair Food Network, an organization that has embraced the mission of helping families who need healthy food to gain access to it while also increasing the livelihood for farmers in America and growing local economies. Started by Oran B. Hesterna, the Fair Food Network has invested over \$200 million in various projects and initiatives, such as the Double Up Food Bucks program, to help low-income and minority communities access healthier food.

Bees

Bees and other pollinating insects are currently improving the food production of 2 billion small farmers worldwide, helping to ensure food security for the world's population. Research shows that if pollination is managed well on small diverse farms, with all other factors being equal, crop yields can increase by a significant median of 24 percent.

How animal pollinators positively affect fruit condition and nutrient content is still being discovered.

Major parties involved

Afghanistan

In Afghanistan, about 35% of households are food insecure. The prevalence of under-weight, stunting, and wasting in children under 5 years of age is also very high.

Mexico

Main article: Food security in Mexico

Food insecurity has been an issue for Mexico throughout its history. Although food availability is not the issue, severe deficiencies in the accessibility of food contributes to the insecurity. Between 2003 and 2005, the total Mexican food supply was well above the sufficient to meet the requirements of the Mexican population, averaging 3,270 kilocalories per daily capita, higher than the minimum requirements of 1,850 kilocalories per daily capita. However, at least 10 percent of the population in every Mexican state suffers from inadequate food access. In nine states, 25–35 percent live in food-insecure households. More than 10 percent of the populations of seven Mexican states fall into the category of Serious Food Insecurity. The issue of food inaccessibility is magnified by chronic child malnutrition, as well as obesity in children, adolescents, and family. Mexico is vulnerable to drought, which can further cripple agriculture.

Singapore

In 2019, Singapore managed to produce only 13% of leafy vegetables, 24% of its eggs, and 9% of its fish. In 1965, it was still able to produce 60% of its vegetable demand, 80% of its poultry and 100% of its eggs. In 2019, it announced it launched the "30 by 30" program which aims to drastically reduce its food insecurity through hydroponic farms and aquaculture farms.

United States

Further information: [Hunger in the United States](#)

Infographic about food insecurity in the US

The United States Department of Agriculture defines food insecurity as "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways." Food security is defined by the USDA as "access by all people at all times to enough food for an active, healthy life."

National Food Security Surveys are the main survey tool used by the USDA to measure food security in the United States. Based on respondents' answers to survey questions, the household can be placed on a continuum of food security defined by the USDA. This continuum has four categories: high food security, marginal food security, low food security, and very low food security. The

continuum of food security ranges from households that consistently have access to nutritious food to households where at least one or more members routinely go without food due to economic reasons. Economic Research Service report number 155 (ERS-155) estimates that 14.5 percent (17.6 million) of US households were food insecure at some point in 2012.

Across 2016, 2017, and 2018:

11.1 percent (14.3 million) of U.S. households were food insecure at some time during 2018.

In 6.8 percent of households with children, only adults were food insecure in 2018.

Both children and adults were food insecure in 7.1 percent of households with children (2.7 million households) in 2018.

11.8 percent (15.0 million) of U.S. households were food insecure at some time during 2017.

7.4 percent (9.4 million) of U.S. households had low food security in 2016.

4.9 percent (6.1 million) of U.S. households had very low food security at some time during 2016.

Both children and adults were food insecure in 8.0 percent of households with children (3.1 million households).

Democratic Republic of Congo

The Democratic Republic of Congo is the second-largest country in Africa and is dealing with food insecurity. Although they have an abundance of natural resources, they lack accessibility of essential foods, which makes it difficult for the Congolese people in their daily lives. Malnutrition is high among children, which affects their ability, and children who live in a rural area are affected more than children who live in an urban area. In the Democratic Republic of Congo, about 33% of households are food insecure; it is 60% in eastern provinces. A study showed the correlation of food insecurity negatively affecting at-risk HIV adults in the Democratic Republic of Congo.

In 2007-2008, grain prices increased and the people in the Democratic Republic of the Congo went to civil unrest. There were riots and protests. Hunger is frequent in the country, but sometimes it is to the extreme that many families cannot afford to eat every day. Bushmeat trade was used to measure the trend of food security.

The trend signifies the amount of consumption in urban and rural areas. Urban areas mainly consume bushmeat because they cannot afford other types of meat.

Effects of Food Insecurity

Children with symptoms of low calorie and protein intake and a nurse attendant at a Nigerian orphanage in the late 1960s
Many countries experience ongoing food shortages and distribution problems. These result in chronic and often widespread hunger amongst significant numbers of people. Human populations can respond to chronic hunger and malnutrition by decreasing body size, known in medical terms as stunting or stunted growth. This process starts in utero if the mother is malnourished and continues through approximately the third year of life. It leads to higher infant and child mortality, but at rates far lower than during famines. Once stunting has occurred, improved nutritional intake after the age of about two years is unable to reverse the damage. Stunting itself can be viewed as a coping mechanism, bringing body size into alignment with the calories available during adulthood in the location where the child is born. Limiting body size as a way of adapting to low levels of energy (calories) adversely affects health in three ways:

- Premature failure of vital organs during adulthood. For example, a 50-year-old individual might die of heart failure because his/her heart suffered structural defects during early development;
- Stunted individuals suffer a higher rate of disease and illness than those who have not undergone stunting;
- Severe malnutrition in early childhood often leads to defects in cognitive development. It therefore creates disparity among children who did not experience severe malnutrition and those who experience it.

Depression, anxiety, and sleep disorders

A recent comprehensive systematic review showed that over 50 studies have shown that food insecurity is strongly associated with a higher risk of depression, anxiety, and sleep disorders.[61] For

depression and anxiety, food-insecure individuals have almost a 3x risk increase compared to food-secure individuals.

Possible solutions

- **Close the yield gap**

By 2050, 120 million hectares of natural habitats will be converted to farming in developing countries, the World Wildlife Fund estimates. In many parts of the world, current agricultural land is not reaching its potential, yielding 50 percent less than what it could produce. Closing the gap between what is being produced and what could be produced would both reduce the need to clear land for agriculture and feed 850 million people. The next points address how this gap can be diminished.

- **Use fertilizer more efficiently**

Based on previous studies, West and his team estimated that the use of fertilizers with nitrogen and phosphorus on wheat, rice and maize crops could be reduced by 13-29 percent and still produce the same yields. Further efficiency could be gained through adjustments in the timing, placement and type of fertilizer.

- **Raise low water productivity**

Improving irrigation systems and planting crops that use less water would be an effective way to tackle this. For example, rice and sugar cane are among the crops that need the most water. But it's not simple to change the types of crops grown since farmers make decisions of what to grow based on market values. One way to encourage change would be to provide economic incentives, but that can change based on regional differences and cultural tastes.

- **Target food for direct consumption**

A lot of caloric efficiency is lost when crops are converted for animal feed and other non-food uses. If these crops were used

directly to feed people, they could provide enough calories for 4 billion people. In some cases, this would mean changing where certain crops are grown, but like point number 3, changing crops isn't straightforward. Farmers grow crops that will ensure that they and their family can eat, whether that means eating their own crops or selling them to be able to afford food.

- **Reduce food waste**

Globally, 30-50 percent of food production goes to waste because of inefficient preparation or inadequate storage facilities. The United States is one of the biggest culprits for this and needs an agricultural land base that is 7 to 8 times larger than a land base in India to compensate for this waste. Reducing food waste in the United States, India and China could feed 413 million people per year.

- **Better access to food**

While short-term intervention can be important to address the immediate needs of the most vulnerable (emergency food aid, for example), policy efforts must also focus on sustainable solutions to build medium- and long-term resilience to food supply shocks for those people currently afflicted by chronic hunger and food insecurity. The root cause of most food insecurity today is poverty. Globally, there is enough food available to feed everyone, but many people are too poor or have inadequate incomes to afford it. As such, increasing the incomes of the poor and tackling development challenges for countries are critical elements for achieving global food security. But policies may also be needed to ensure that higher incomes translate into improved nutrition, including policies focused on health, education, social protection and infrastructure.

- **Policy choices**

That said, it is important to look at the specific role of agricultural policies, in particular given that many agricultural policies are maintained with the stated aim of increasing food security. In many countries, market interventions in the agriculture sector (such as subsidies or export restrictions) are often aimed at promoting food security through self-sufficiency in food production. However, these policies often result in higher prices for staple foods, with a negative impact on the food security of poor households (which can include poor farmers who may be net consumers of such crops). Many support policies not only fail to achieve their aim, they can also divert public resources away from actions that could tangibly contribute to improved food security. These includes efforts to create a stronger enabling environment for agricultural productivity or to develop agricultural innovation systems to boost productivity growth. Other investments that support improved food production and availability include rural infrastructure and storage facilities, and appropriate training and advisory services. Strong and effective systems to build resilience and risk management capacity in agriculture production are also critical in helping build food security at the national and global levels.

- Food security is also about ensuring that food is available where it is needed. Some parts of the world are better endowed than others in terms of climate, soil, water and geography – and climate change will make trade even more crucial for food security, as agricultural production conditions deteriorate in some parts of the world and volatility in production worsens. Enabling households to access the quantity, quality and variety of nutritious foods they need for a healthy and fulfilling life requires open, predictable, non-discriminatory and fair international conditions for trade in agriculture and food. Exposure to world market prices (which are generally more stable than domestic markets prices) can also reinforce market signals to encourage production to occur in areas where it is most efficient to do so.

- **Acknowledging food security as an international priority**

The urgent need to address global food security is rightly recognised in the UN Sustainable Development Goals (SDGs). SDG2 sets targets to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture by 2030. These are critical challenges for the world, and they are not challenges that any one country can solve alone. They will require not only renewed efforts to improve domestic policies, but also renewed efforts to strengthen international co-operation to ensure that investments in better production can be made, and food can move to where it is needed around the globe.

Bibliography

<http://www.fao.org/3/a-i1683e.pdf>

<https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security/>

<https://foodinsight.org/food-security-102-what-is-being-done-to-reduce-global-food-insecurity/>

<https://www.wikizeroo.org/index.php?q=aHRocHM6Ly9lbj5tLndp a2lwZWRRpYS5vcmcvd2lraS9Gb29kX3NlY3VyaXR5>