1. the secure provision of sufficient food to maintain a healthy population, which can be threatened by natural disasters, poverty, changes to the environment, wars, population growth, and trade barriers.

Summary Article: Food Security
From Green Cities: An A-to-Z Guide

Food security, as defined by the World Food Summit of 1996, is “when people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life.” Usually, the concept of food security includes both physical and economic access to food that meets people’s dietary needs and preferences. Cities employ various strategies to ensure that their populations are food secure, including supporting urban agriculture, food banks and other charities that feed people, and the elimination of food deserts by supporting food retailers in communities that lack sources of healthy food.

The definition of food security has evolved over a period of time. In 1974, food security was defined by the World Food Summit as the “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices.” This was expanded by the Food and Agriculture Organization of the United Nations in 1983 to include securing access by vulnerable people to available supplies. This was to balance the demand and supply side of the food security equation.

In 1986, the World Bank Report on Poverty and Hunger brought attention to the temporal dynamics of food insecurity and introduced distinction between chronic food insecurity and transitory food insecurity. Chronic food insecurity is usually long term, occurring when people are unable to meet their minimum food requirements over a sustained period of time, and is related to (or to the result of) issues of low incomes and continuing poverty, whereas transitory food security is short term and temporary and refers to the food shortage resulting from a sudden drop in the ability to produce or access enough food because of natural disasters, conflict, or maybe some sort of economic collapse.

By the mid-1990s, food security had become a major concern at a global level, and access to food now included sufficient food, indicating concern for protein-energy malnutrition. Later, the definition was expanded to incorporate food safety, nutritional balance, and food preferences. In 1994, the U.N. Development Programme Human Development Report included food security in the concept of human security (which is related to the human rights perspective on development). In 2001, the definition of food security described above was modified in The State of Food Security 2001, now reading, “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”

In addition to chronic and transitory food insecurity, there is a third type of food insecurity: seasonal
food insecurity. Just like chronic food insecurity, it is relatively easier to predict because it follows a sequence of known events. Seasonal food insecurity is usually of limited duration and can be seen as recurrent transitory food insecurity. This is usually associated with seasonal fluctuations in weather, climate, cropping patterns, and diseases at certain times.

The Pillars of Food Security
The concept of food security has three pillars: food availability, food access, and food use. Food availability means that there is enough quantity of food available at all times; food access refers to the available resources to obtain the amount of food needed for a nutritious diet; and food use means the appropriate use of a variety of food items based on the knowledge of basic nutrition and care. Food use also includes the knowledge or application of adequate water and sanitation.

There have also been studies to define food security at a household or individual level. The concept of household food insecurity originated with research among low-income women in upstate New York by Radimer (and team) in the early 1990s, when four dimensions of household food insecurity were identified:

- Quantitative: Referring to not enough quantity of food available
- Qualitative: When the quality of food is sufficient (i.e., reliance on inexpensive food that is nonnutritious)
- Psychological: This is related more to the stress related to meeting daily food needs when there is not a surety that food (all meals) will be available every day (i.e., there is an anxiety about food supply)
- Social: This dimension includes getting food from charitable assistance or incidents in which food was bought on credit or stolen

In a way, these four dimensions of food insecurity are linked to the five conceptual components of food security. The existence of food-insecure households are examples of absence of universal access to food by all people, inability of households to have stable access to food because of resource limitations, leading to a psychological effect on adults if there is a constant anxiety for feeding themselves and their children. Household food insecurity can also lead to issues with access to food with human dignity if the household has to rely on charities or socially unacceptable ways to meet their dietary needs.

There has been a slight shift in the focus by many agencies, including public health agencies, from household to community level—the main difference being in the sense that the focus of household food security is mainly physical and economic access to food, whereas community food security adds the importance of economic, environmental, and social aspects of the food system, in addition to the two goals of household-level food security.

So far the definitions of food security have focused on universal access to availability of food. There are other definitions of food security in which security is taken to a global level and refers to the self-sufficiency and security of a country. The Organization for Economic Development and Cooperation, for example, defines food security as a “concept which discourages opening the domestic market to foreign agricultural products on the principle that a country must be as self-sufficient as possible for its basic dietary needs.”

https://search.credoreference.com/content/topic/food_security
For any intervention in food insecurity, it is not enough to know just about the length of insecurity, it is also important to measure the intensity or severity of the effect of the identified problem on the overall food security and nutrition status. The Food and Agriculture Organization measures hunger in terms of “undernourishment,” which refers to the proportion of the population whose dietary energy consumption is less than a predetermined threshold (which is country specific). The severity of undernourishment indicates the extent to which dietary energy consumption is below the predetermined threshold level of that region/country. Another way to look at food security is to look at people who are vulnerable to experiencing food insecurity in the future. “Vulnerability” is defined in terms of three critical dimensions: vulnerability to an outcome, vulnerability from a variety of risk factors, and vulnerability resulting from inability to manage risks. The two interventions suggested include reducing the degree of exposure to the hazard and increasing the ability of the vulnerable population to cope with the risks and hazards.

The U.S. Agency for International Development measures the food security of a country based on the gap between projected domestic food consumption (which is a difference between food produced domestically and food imported from nonfood use) and a consumption requirement. All the aid commodities are converted into grain equivalent based on calorie content to allow aggregation. Food gaps are projected using two consumption criteria: status quo target (it takes three-year average for per capita consumption target to eliminate short-term fluctuations) and nutrition-based target (in which the objective is to maintain daily caloric intake standards, as recommended by the Food and Agriculture Organization).

According to the Food and Agriculture Organization (FAO), “food security depends more on socioeconomic conditions than on agroclimatic ones, and on access to food rather than the production or physical availability of food.” It also states that, to evaluate the potential impacts of climate change on food security, “it is not enough to assess the impacts on domestic production in food-insecure countries. One also needs to (i) assess climate change impacts on foreign exchange earnings; (ii) determine the ability of food surplus countries to increase their commercial exports or food aid; and (iii) analyze how the incomes of the poor will be affected by climate change.”

As pointed out by FAO, “in the ‘century of cities,’ a major challenge will be providing food for urban inhabitants, especially the poor.” A major challenge in urban areas is that open land is replaced by buildings and pavement, meaning that land is not available for agricultural production, leaving residents dependent on food grown elsewhere. Food insecurity in urban areas also relates to income inequality, problems of inequitable distribution, an increasing urban, land degradation, and institutional and governance shortcomes. A few factors directly influencing urban food (in)security are:

- Income insecurity: either the household or individuals do not have enough or a stable income to buy sufficient food, or a disproportionate amount of their income is allocated for other living expenses, such as rent
- Spatial factors, which may leave certain areas or neighborhoods without access to affordable grocery stores or markets
- Isolation or lack of a social network

**Food Security and Climate Change**

Climate change has an effect on agriculture, on food production, and as a result, on food security. There
is a direct effect on food production resulting from changes in temperatures, precipitations, land suitability, crop yields, and agro-ecological conditions, and the indirect impact comes from the effect on growth and distribution of incomes (and its link to demand for agricultural products). Change in global and regional weather conditions (an increase in the frequency and severity of extreme events such as droughts, floods, hailstorms, and cyclones) has an effect on crop yields and local food supplied, affecting the stability of food supplies, and thus food security. Climate change will also have an effect on the ability of individuals to use food effectively. This will alter the conditions for food safety and change the disease pressure from vector-, water-, and food-borne diseases. “The main concern about climate change and food security is that changing climatic conditions can initiate a vicious circle where infectious diseases causes or compounds hunger, which, in turn, makes the affected populations more susceptible to infectious diseases.” This can result in decline in labor productivity (if labor is unable to work because of illnesses or lack of nutrition), an increase in poverty, and even an increase in mortality rates.

Some of the different strategies to deal with these issues include strengthening resilience (which involves protection of existing livelihoods of vulnerable people, diversifying their sources of income, and changing their livelihoods) by changing consumption patterns and food preparation practices, raising productivity through improved agricultural water management (this is really crucial to ensuring global food supply and global food security and can be done by either conservation agriculture or promoting agro-biodiversity among other things), and adapting sustainable livestock management practices.

To address the issue of food security and hunger, the first Millennium Development Goal seeks by 2015 to reduce by half the proportion of the world’s population experiencing hunger. According to the World Bank's estimates in 2005, 1.4 billion people in developing countries were living in extreme poverty. According to recent studies, even though the proportion of people worldwide suffering from malnutrition and hunger has dropped since the early 1990s, the absolute number of people lacking access to food has risen. With recent economic crises and increases in food prices, it is estimated that about 1 billion people will go hungry, and another two billion will be undernourished. Studies have shown that eastern Asia, and China in particular, have been successful in halving the proportion of underweight children between 1990 and 2006 compared with southern Asia, where 50 percent of children are still underweight. This region accounts for the more than half the world's undernourished children, whereas sub-Saharan Africa represents the region in which there has been the least progress made in meeting the target of reducing child malnutrition.

Food Security and Biofuels

Food security issues are also compromised by the production of cash crops to maximize profit, or by growing agricultural products geared toward biofuels. Because of increased demand for coffee, corn, and other foodstuffs in North America, there has been a trend in some developing countries to grow more cash crops for exporting to these countries than growing food to meet local demand. This has been an ongoing issue in some developing countries for a while, threatening food security in the region.

Biofuel development was seen as a positive development in terms of mitigation of climate change (as compared with use of traditional fuels) to alleviate global energy concerns, and also to foster rural development. However, the rapid growth in biofuels production has raised concerns about the threat it poses to food security. The U.N. Secretary General, in his opening remarks to the High-Level Segment of the 16th session of the U.N. Commission on Sustainable Development, noted that “We need to
ensure that policies promoting biofuels are consistent with maintaining food security and achieving sustainable development goals.” In addition, integration of the agricultural and energy sectors (caused by growth and demand of biofuels) is something new and has an effect on food policy and the concept of sustainable development. As a result of this integration, the prices of agricultural commodities went up for the first time in decades. The potential effect of this large-scale expansion of the biofuel market and reduction of food production for human consumption and consumers, especially in low-income countries, is a challenge for food policy planners and also raises a question of sustainable development and whether the Millennium Development Goal on sustainable development can be achieved. However, most of the studies have concluded that although the first generation of biofuels did threaten the availability of adequate food supplies by diverting resources away from food and feed crops into biofuel production, the second generation of biofuels has taken sustainability issues (i.e., social, economic, and environmental) and the effect on land use, and so on, into consideration. This would imply that the second generation of biofuels is actually greener than the first generation of biofuels.

Food security is a complex sustainable development issue that is linked to health though malnutrition and is also linked to sustainable economic development, environment, and trade. Food security happens usually when food is produced in a way that it is safe for people and the environment; farmers can earn a fair income; local, regional, and community food production is encouraged and supported; social justice is a priority; and all people work together to create positive change in the food system and communities.

See Also:
Carrying Capacity, Millennium Development Goals, Sustainability Indicators, Sustainable Development

Further Readings


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