

Various Types of Components and Different Challenges in Agriculture Food Systems

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Opinion Article

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ABOUT THE STUDY

Agriculture food systems include food and non-food agricultural product primary production, as well as food storage, aggregation, post-harvest handling, transportation, processing, distribution, marketing, disposal, and consumption. Food systems are all food products that are intended for human consumption that originate from crop and livestock production, forestry, fisheries and aquaculture, and other sources such as synthetic biology.

Agriculture food system

The term food system describes the interconnected systems and processes that influence nutrition, food, health etc. Food distribution links production and consumption, such as through domestic food transportation networks and supply chains. All activities involved in post-harvest handling, storage, aggregation, transport, processing, distribution, and marketing of food are included in food supply chains. Household consumption, the downstream result of functioning agriculture food systems is vulnerable to varying degrees of demand shocks, such as income loss, depending on the proportion of groups in the population. The greater this proportion, the more difficult it is to safeguard food security and nutrition against shocks. The global agriculture food systems are a massive global enterprise that produces approximately 11 billion tons of food and a plethora of non-food products each year, including 32 million tons of natural fibers and 4 billion m³ of wood. In 2018, the estimated gross value of agricultural output was \$3.5 trillion. Primary production alone represents approximately one-quarter of global employment, more than half in Sub-Saharan Africa, and nearly 60% in low-income countries. Agriculture food systems, which include both upstream and downstream segments ranging from food storage and processing to

transportation, retailing, and consumption, are the backbone of many economies. The food and beverage industry employs more people than any other manufacturing sector in the European Union.

Types of components

Technical and policy issues fundamental to food system operations are depicted around the three components of production, distribution, and consumption.

Food production: Food production includes factors such as the use of land for productive purposes, the distribution of land ownership within communities and regions, soil management, crop breeding and selection, crop management, livestock breeding and management, and harvesting, all of which have been discussed previously.

Food distribution: Food distribution entails a variety of post-harvest activities such as food processing, transportation, storage, packaging, and marketing, as well as activities related to household purchasing power, food use traditions, food exchanges and gift-giving, and public food distribution.

Food consumption: Food-related activities include those involved in food preparation, processing, and cooking at both the home and community levels, as well as household food decision-making, household food distribution process, individual and cultural food choices, and access to health care, hygiene, and knowledge.

Challenges

Hunger and malnutrition: Hunger is on the rise, particularly in countries affected by conflict, extreme weather, and economic downturns, as well as those with high income inequality. Food crises grew in magnitude and severity in 2020, as protracted conflict, the economic fallout from the COVID-19 pandemic, and weather extremes exacerbated pre-existing vulnerabilities. Economic downturns in 2020, included those caused by COVID-19 restrictions, tried to deal the most severe blow to those suffering from hunger in decades, increasing the number of undernourished people by 118 million in 2020 alone, demonstrating the devastating impact of a shock occurring alongside existing vulnerabilities. There is little evidence of decreased food supply, which could be due to government exemptions for the agriculture food sector. Lockdowns and other mobility restrictions, on the other hand, significantly reduced the movement of people and goods, affecting livelihoods. Losses in income and purchasing power harmed billions of people's food security and nutrition, particularly in low- and middle-income countries. Families were forced to switch to cheaper, less nutritious foods at a time when their immune systems needed to be protected and strengthened. Reduced access to nutritious food and a shift to low-quality, energy-dense diets as a result of the COVID-19 pandemic's economic consequences risk increasing levels of overweight and obesity in almost all regions of the world. Adult obesity has been increasing for more than 15 years, with no reversal in the trend at the global or regional level, increasing the non-communicable diseases associated with those forms of malnutrition.

Demographic and environmental pressures

Food and Agricultural Organization (FAO) estimates that agriculture will need to produce 40-54 percent more food, feed, and biofuel feedstock than in 2012 to feed a world population expected to reach 9.7 billion by 2050, depending on the scenario. Many low- and middle-income countries' diets are shifting toward more resource-intensive animal sources and processed food as a result of urbanization and increased affluence. If current trends continue, diet-related health costs associated with non-communicable diseases will exceed US\$1.3 trillion per year by 2030, while associated Green House Gas (GHG) emissions will exceed US\$1.7 trillion. This increased food demand is aggravated by shocks and stresses, such as more frequent and intense extreme and slow-onset events caused by climate change, which endangers agricultural production as well as the middle and downstream stages

of agriculture food systems. However, even though agriculture food systems are affected by climate shocks and stresses, they are a significant contributor to climate change.