

Building resilience through agrifood systems transformation

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Introduction

Since 1798, when Robert Malthus gave a dire warning about the effects of population growth outpacing food production--including famine, wars, and subsequently, population decline--the spectre of severe food shortages afflicting many places in the world has reared its head at various times in history. Indeed, the Malthusian scare could well have prompted national and international efforts to increase food production through the use of laboratory-developed crop varieties that were designed to deliver higher yields with the combination of intensive irrigation and unprecedented amounts of chemical inputs.

In recent years, however, the threat of a catastrophic depletion of the world's food supply has been abated by advances in agricultural techniques and modern reductions in human fertility. However, dystopian fears of food running out all over the world are easily stoked.

Climate change, particularly global warming and its attendant effects of drought and flooding, has emerged as the most serious and predominant threat to food production. Unsustainable agriculture practices and biodiversity degradation have also been cited for diminishing farmers' and peasants' ability to produce food, but climate change looms much more largely in concerns about food insecurity.

Many roadmaps for a more resilient agriculture, including that of the UN Food and Agriculture Organization (FAO), invariably seek to address if not forestall the impact of climate change on food production, and thereby ensure that the food needs of current and future generations are adequately met.

Productivist narrative at the center of mainstream agri-food production strategies, policies and programs

A "productivist," or "feed the world," narrative imbued the Malthusian crisis in the 18th century, and it persists to this day, as the foundation of strategies and programs for agriculture and food production. The "productivist" narrative argues that insufficiency in the supply of food is the main cause of global hunger and food insecurity, and thus, focuses on the quantity of food and calories produced. It is at the heart of programs and policies to "double food production by 2050," maximize yields, and subscribe the export-oriented models being advanced by the Global North. Concerns about social, health and ecological costs of such models are subjugated to the imperative to increase food production to "feed the world."

The productivist narrative influences the three predominant solutions or approaches for fixing the current food-agri system that is deemed to be "broken." These approaches are: (1) technological or technocentric approach, (2) the market approach, and (3) the business approach.

The technological or technocentric approach views hunger as a food availability problem, that is, hunger results when there is not enough food to go around. Thus, this approach is usually focused on increasing the physical stock of food, and its tool is Big Science--large scale, project driven, technologically sophisticated science, like genetic engineering, precision agriculture, robotics, Artificial Intelligence (A.I.), and big data, among others.

Meanwhile, the market approach reduces the problem of hunger to people's lack of money for food. It ignores the basic issue that resources are not distributed equitably in the first place. As a result, there is no assurance that economic growth will improve agriculture and reduce hunger.

Finally, the business model sees the hunger problem as one of access and availability. The solution it puts forward is to reduce the variation of plants and animals in order to create standardized agricultural processes that will supposedly maximize the return on investment, improve economies of scale, and increase profits.

However, data does not support the productivist narrative. For instance, between 1993 and 2021, the world's population increased from 5.38 billion to 7.8 billion. At the same time, cereal production has more than kept pace with population growth during the same period, surging from 1.7 billion metric tons in 1993 to 3.07 billion metric tons in 2021. This represents higher per capita cereal production in 2021. Using data from as far back as 1964, the same trend can be observed. Clearly, cereal production has already surpassed population growth. As early as 2015, a study done by the International Assessment of Agricultural Knowledge, Science and Technology for Development, or the IAASTD, showed that there is more than enough food to feed the world. The question is, why do we still have more than 800 million hungry people globally? This indicates that the solution to global food insecurity is not as simple as merely increasing food productivity.

Notwithstanding the fact that data disproves it, the productivist narrative prevails. It posits that our food systems are broken, and that unless they are fixed, population growth and climate change will mean that not every person in the world can be fed. It calls for new technological interventions as the solution.

For organizations like SEARICE who work closely with smallholder food producers, this assumption is not only simplistic but wrong.

We agree however that the industrial food system is broken. More than that, it is actively damaging.

Its exclusive focus on increasing agricultural production has led to severe environmental impacts, including intensified climate change, which further undermines the sustainability of food production. Furthermore, it marginalizes small-scale food producers and landless workers thus contributing to greater inequality in rural areas and the failure to address the root cause of poverty.

World trade, which has had an enormous impact on agricultural policies in many developing countries, bears more of the blame for food insecurity, especially in poor countries. For instance, instead of focusing on providing the population with food, and promoting the development of domestic markets and rural areas, the world trade system makes it more rewarding for the government and local elite groups to prioritize the pursuit of foreign currency and tax revenue earnings from agricultural exports. While large parts of their population are suffering from hunger, many countries choose to supply cheap raw materials for the animal feed, fiber, (bio)fuel, and luxury food industries in the North, with devastating ecological and social costs for their population. As net-importers of food, least developed countries are held hostage to world market prices over which they have no influence. At the same time, as net buyers of food, these countries are extremely vulnerable when the food supply constricts as a result of pandemics, for example. Least developed countries end up as perennial losers from global trade and its continued liberalization.

Corporate takeover of food systems and the global advance of ultraprocessed foods

The continuing influence of the productivist narrative, especially the business model that it espouses, has led to the corporate takeover of the global food system. This can be seen for example in the worldwide

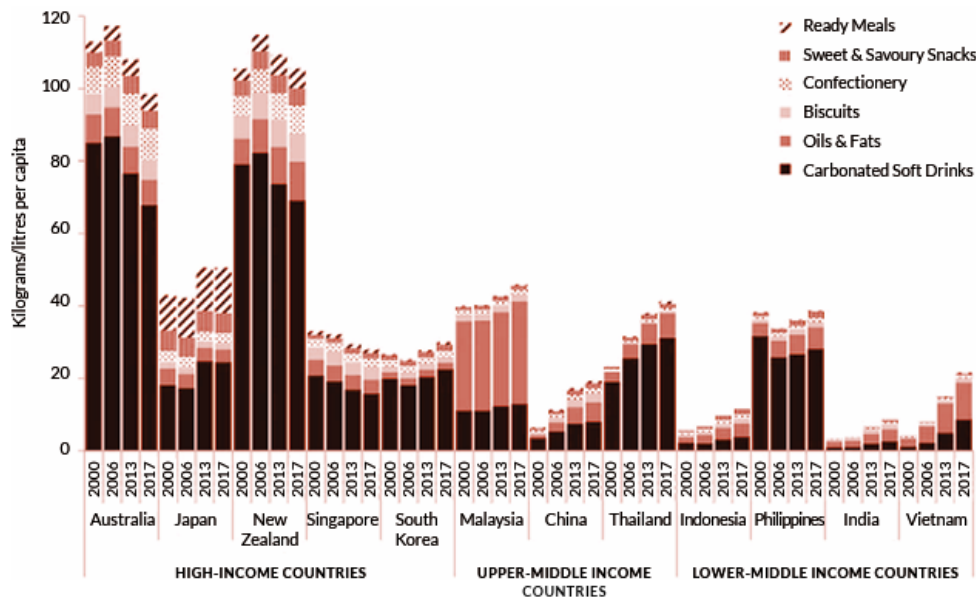
growth and expansion of transnational food and beverage corporations (TFBCs) that have flooded the global markets with ultraprocessed foods and drinks (UPFDs). These foods and drinks can be mass produced at an unprecedented scale, and thus complement the productivist imperative of producing more and more food to feed the world.

According to a 2016 study,¹ UPFDs now dominate the food systems of high-income countries. Almost two-thirds (or 61 percent) of energy food purchases by households in the United States come from UPFDs.

On March 14, 2019, Wiley Obesity Reviews, a journal, published the results² of a study of total food and drink volume sales per capita in 80 countries during the period 2002 to 2016. It reported that volume sales of ultraprocessed foods (UPFs) were highest in South and Southeast Asia (67.3 percent), followed by North Africa and the Middle East (57.6 percent). Similarly, South and Southeast Asia dominated the volume sales of ultraprocessed drinks (UPDs), at 120.0 percent, with Africa ranking next, at 70.7 percent.

Trade and investment liberalization in Asia, such as those that are covered by bilateral and regional agreements at the Association of Southeast Asian Nations (ASEAN) have helped to reduce barriers to the movement of investments, technologies, production capacity, raw materials and final products across countries. These have allowed TBFCs to more easily penetrate Southeast Asian markets (Baker and Friel, 2016).

Figure 1. Increasing consumption of ultraprocessed foods and drinks across Asia



¹ Philip Baker and Sharon Friel. Food systems transformations, ultraprocessed food markets and the nutrition transition in Asia, *GTGlobalization and Health* (2016) 12:80 DOI 10.1186/s12992-016-0223-3. Published online on 3 December 2016. [As cited in SEARICE. Farmers' seed system as the bedrock of food system transformation, 2022.]

² Vandevijvere S, Jaacks LM, Monteiro CA, et al. Global trends in ultraprocessed food and drink product sales and their association with adult body mass index trajectories. *Obesity Reviews*. 2019;20(S2):10–19. <https://doi.org/10.1111/obr.12860>. [As cited in SEARICE. Farmers' seed system as the bedrock of food system transformation, 2022.]

Source: Philip Baker and Sharon Friel. Food systems transformations, ultraprocessed food markets and the nutrition transition in Asia, GTlobalization and Health (2016) 12:80 DOI 10.1186/s12992-016-0223-3. Published online on 3 December 2016.

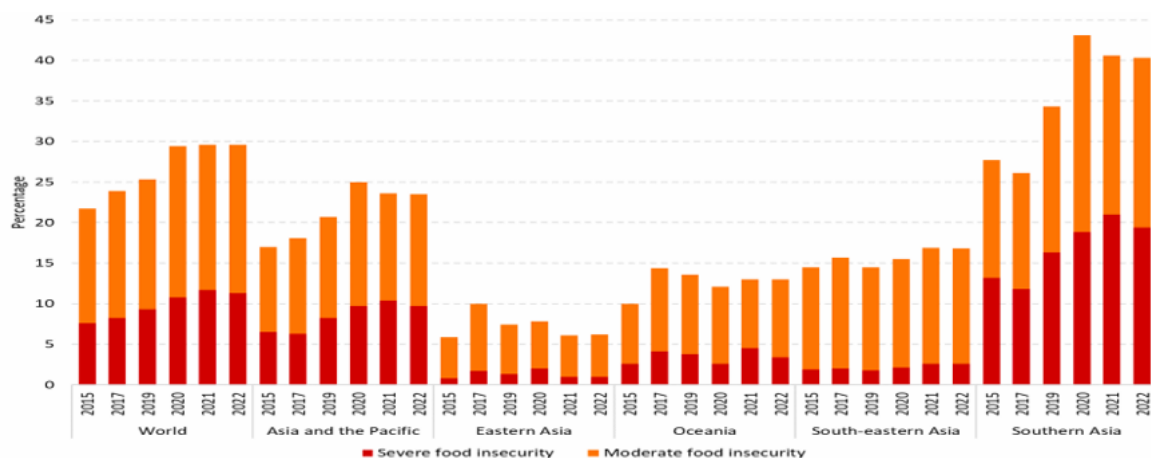
UPFDs have indeed come to dominate global food consumption, and as a result, have given rise to an epidemic of illnesses as well as environmental destruction. The consumption of UPFDs has been associated with a range of health problems, including obesity and various chronic diseases, such as cardiovascular disease and dementia.

Additionally, the production and consumption of UPFDs have had adverse environmental impacts.³ The production of UPFDs utilizes only a few crops. An ongoing study of 7,020 UPFs sold in major supermarket chains in Brazil has found that these foods were derived from only five sources, namely, sugar cane, milk, wheat, corn and soy.

This narrow focus on just a few crops has resulted in the erosion of agricultural biodiversity. Data from the Food and Agriculture Organization (FAO, 2019) showed that the biodiversity of food crops is declining. Starting with 7,000 edible plant species that had been used for human food since the origin of agriculture, only 200 species were being grown as of 2014. In the same year, only nine crops made up over 66 percent by weight of all crop production.

Furthermore, in contrast to their productivist promise of food availability for all, commercialized food systems have failed to address world hunger. An ETC Group⁴ study showed that in 2019, prior to the COVID-19 pandemic, an estimated 690 million people were hungry and upwards of two billion people lacked regular access to safe, nutritious and sufficient food.

Figure 2. Prevalence of food insecurity in the world and in Asia and the Pacific by subregion



³ Fernanda Helena Marrocos Leite, Neha Khandpur, Giovanna Calixto Andrade, Kim Anastasiou, Phillip Baker, Mark Lawrence, Carlos Augusto Monteiro. Ultra-processed foods should be central to global food systems dialogue and action on biodiversity. February 2022. BMJ Global Health. <http://dx.doi.org/10.1136/bmjgh-2021-008269>. [As cited in SEARICE. Farmers’ seed system as the bedrock of food system transformation, 2022.]

⁴ IPES-Food & ETC Group, 2021. A Long Food Movement: Transforming Food Systems by 2045. [As cited in SEARICE. Farmers’ seed system as the bedrock of food system transformation, 2022.]

Source: Based on FAO. 2023. Suite of Food Security Indicators. In: FAOSTAT. Rome [Cited July 2023]. <https://www.fao.org/faostat/en/#data/FS>

Genuine solution to the world's broken food system

The first step towards fixing the broken food system is to completely change our development paradigm. The current narrow focus on increasing production to achieve food security is not only inadequate but can be dangerous.

We need a radical shift towards a genuine and holistic sustainable food system. Agroecology has the potential to make this transition happen, but it must be implemented in its totality. More than the application of ecological principles to agricultural systems and practices, agroecology calls for an explicit focus on the social and political dimensions of food systems. Just as importantly, agroecology puts people, especially farmers, at the center of the new food system.

At the heart of the transition towards a sustainable food system is a nexus of agroecology, food systems and farmers' rights. Every person has the right to food, health, and a sustainable and healthy environment. People are not beneficiaries but right holders, not as a matter of charity but by virtue of their inherent human rights.

Good governance is essential to operationalizing this transformative agenda. The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP) already provides the framework and the tool to enable the rights of peasants and the right to food. However, UNDROP still requires an effective mechanism to guarantee its full implementation.

The UN Guiding Principles on Business and Human Rights is another important element of the nexus to regulate the behavior and operations of agrochemical corporations, food processing companies, and all other private entities engaged in food production.

In concrete terms, the genuine transformation of agri-food systems requires the following:

1. Policies that will facilitate the urgent transition to sustainable food systems, including support for family farming and agroecology; the localization of food systems; and the rebuilding of the local economy;
2. Enhancement of local capacities, especially of women and the youth;
3. Social protection for smallholder food producers and consumers;
4. Restoration of the integrity of scientific research as a public good; and
5. Inclusive and transparent policy-making process that guarantees participatory governance in the integration of food and agriculture policies.