



Task Force 6
Accelerating SDGs: Exploring New
Pathways to the 2030 Agenda



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REIMAGINING FOOD SECURITY THROUGH SUSTAINABLE AGRICULTURE AND REDUCED FOOD WASTE

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The image features a white rectangular area centered on a solid red background. In the top-left corner of the white area, there are several overlapping, semi-transparent shapes in shades of red and orange, resembling stylized leaves or petals. The word "Abstract" is written in a bold, black, sans-serif font, centered horizontally within the white area.

Abstract




In recent years, the concept of food security has come to be associated with sustainability. In this context, it is pertinent to focus on goals 2 and 12 of the Sustainable Development Goals (SDGs), which specifically aim to reduce hunger and ensure sustainable consumption and production patterns. This policy brief aims to determine ways to de-escalate hunger globally. SDG-2 is important as it calls for a redesigning of food systems through sustainable agriculture and endeavours to provide farmers with a greater role in the


production process. SDG-12 focuses on fostering sustainable production and consumption practices, with a particular emphasis on minimising global food waste. Therefore, this brief proposes the establishment of a G20 food bank and a shift towards sustainable agricultural practices. This approach will help preserve the capacity of the land and other resources to produce adequate food for all, reduce food wastage through the redistribution of surplus food, and ensure food security on a global scale.



The Challenge



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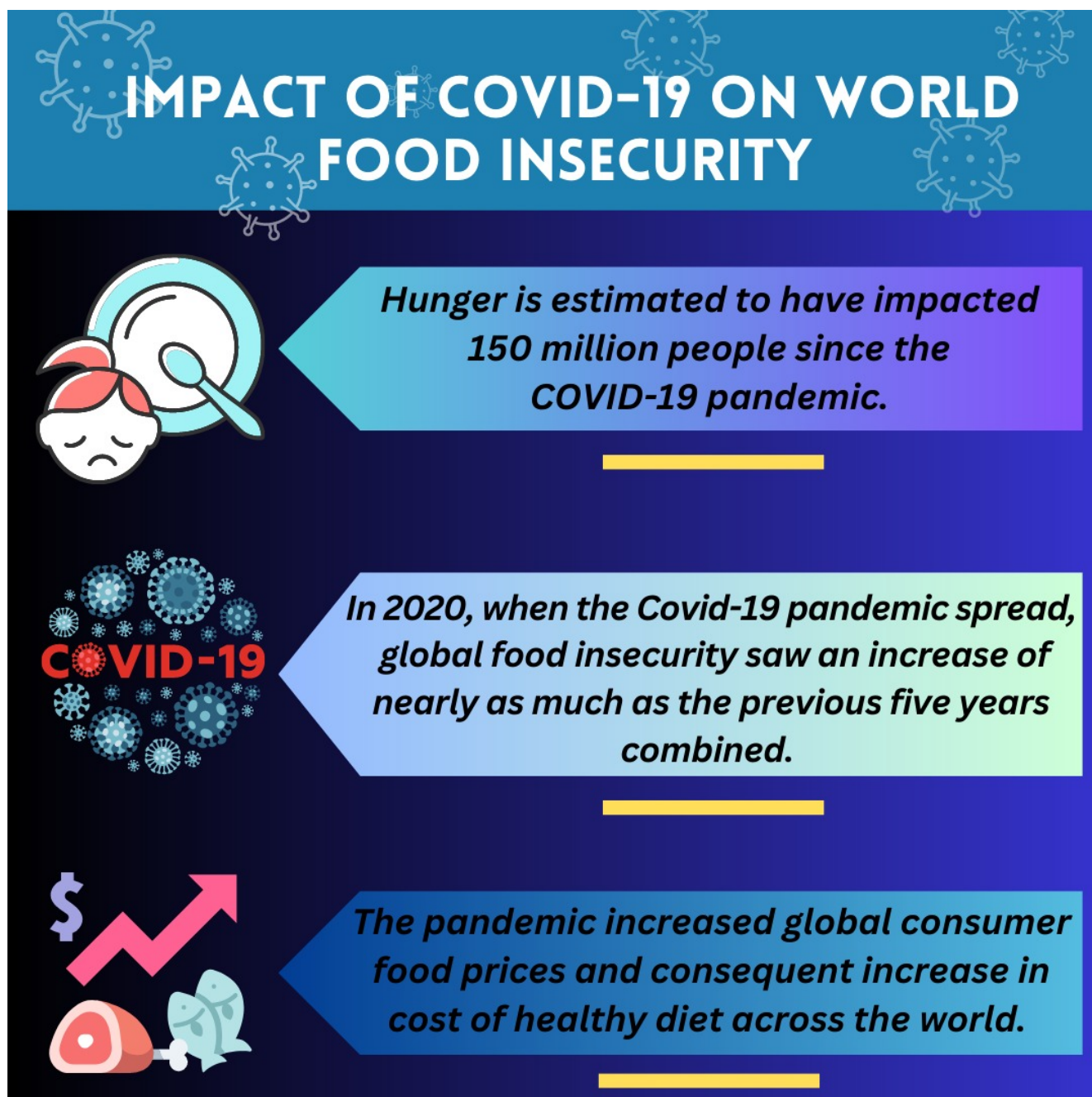


Food security is a critical issue that must be addressed. Amidst the climate crisis and population growth, current food systems¹ are already dysfunctional and incapable of feeding the entire world population. In the present scenario, the world is grappling with the dual problem of a growing population and inefficient use of scarce resources. It is estimated that by 2050, the world population would exponentially rise to 9.8 billion.² This growth demands the production of food on a larger scale; however, unsustainable agri-food practices will further threaten natural resources.

On the other hand, one-third of the food, around 1.3 billion tonnes, suitable for human consumption is lost or wasted across the entire food supply chain.³

This wasted food accounts for 8–10 percent of global greenhouse gas (GHG) emissions, thus accelerating climate crisis and consequently resulting in greater food insecurity.⁴ Instead if this food can be saved, it can be used to feed 1.26 billion people annually.⁵ Furthermore, recent shocks, specifically the COVID-19 pandemic (see Figure 1) and the Russia-Ukraine war (see Figure 2), created severe economic uncertainty with disrupted global agri-food value chains and substantially pressured agricultural output, which resulted in food price volatility and exacerbated global food insecurity.⁶ All these factors combined negatively affect sustainable food production and distribution while escalating food prices and posing a dire threat to global food security.⁷

Figure 1: Impact of COVID-19 on Food Security



Source: Based on data from FAO⁸



Figure 2: Impact of the Russia-Ukraine War on Food Security




Source: Based on data from Welsh⁹ and WFP¹⁰



The G20's Role

2





The G20 leaders have committed to protect the most vulnerable populations from hunger.

They pledge to utilise all available tools to tackle the global food crisis, foster the transformation of food systems to contribute to climate-change adaptation and mitigation, and accelerate efforts to reduce food loss and waste (FLW).¹¹ They also recently committed to taking urgent actions to prevent hunger and malnutrition, and specifically address the vulnerabilities of developing countries by building sustainable and resilient agri-food systems.¹² Additionally, repurposing existing agricultural supports for creating incentives for both producers and consumers became a key instrument in the transition towards sustainable and resilient food systems.¹³ As a result, designing policy implications is critical to address global food insecurity, especially for vulnerable groups, covering both producers and consumers.

The international community has been stepping up its engagement in reducing FLW by expanding on policy advice, capacity building, and financing, but further action is needed. A G20-wide

collective action to scale up the efforts to reduce FLW would be very useful to increase awareness of sustainable and resilient food systems. With that aim, the G20 Food Bank can be established and executed as a global food bank to save food suitable for human consumption from being wasted, while reducing the effect of food insecurity by serving as a safety net for vulnerable groups.

G20 countries have a greater role in improving food security by encouraging public-private partnerships (PPPs), investments in agriculture and rural development, technological advancements and capacity building. PPPs involve collaboration between government agencies, private companies and civil society organisations to address social, economic and environmental challenges.

The G20 can assist in providing farmers with digital technologies and access to information on markets, weather and best practices, helping them make informed decisions about planting, harvesting and selling crops. Further, capacity building can be taken up by training and educating smallholder farmers, government officials and private sector actors to help build their



knowledge and skills in sustainable agriculture, market access and supply chain management. G20 countries can promote policy coherence across sectors and levels of government to ensure that public policies and regulations are aligned with efforts to provide food security. They can also help farmers and others adopt agro-ecological farming practices that protect the biodiversity, conserve natural resources and

increase the resilience of food systems. Governments can also support using renewable energy sources in agriculture by providing tax incentives and regulations to incentivise sustainable agriculture practices. Additionally, governments can collaborate with private sector organisations to develop sustainable supply chains that support smallholder farmers.



Recommendations to the G20



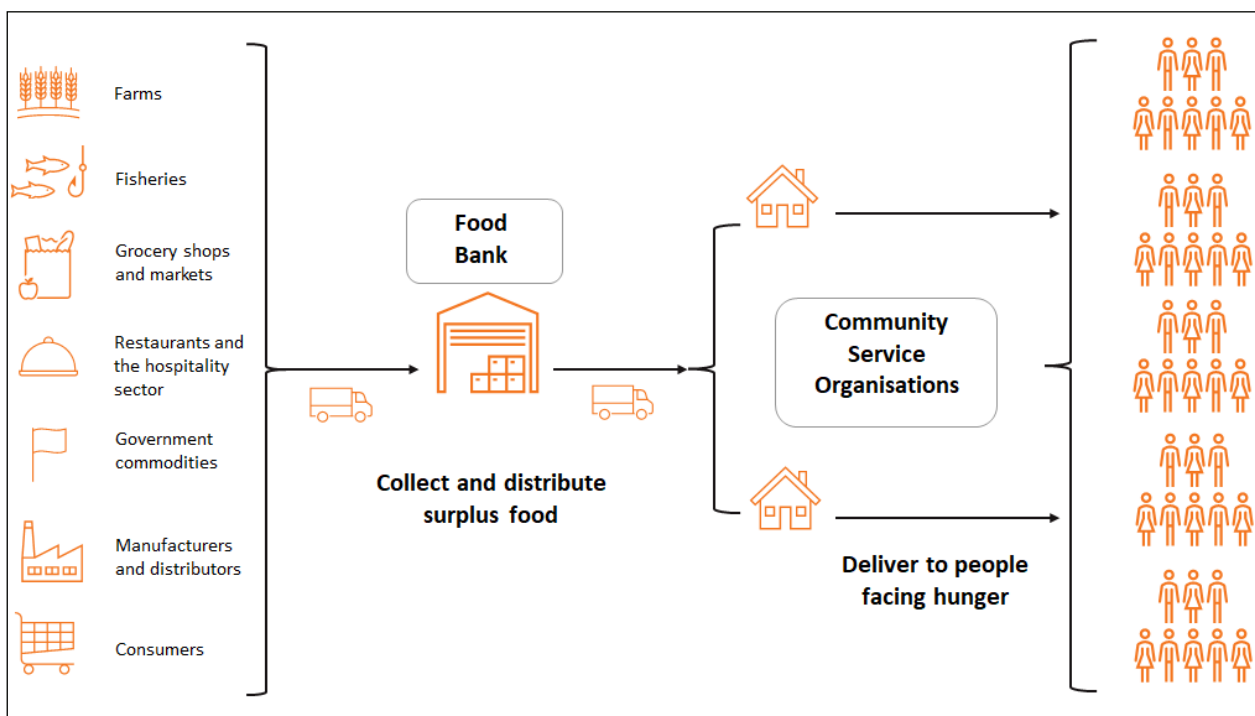
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Establishing a G20 food bank

The proposed G20 food bank will mainly collect and store food and food products, and then distribute them to people in need. Hence, volunteer food manufacturers and distributors, restaurants and the hospitality sector, government commodities, grocery retailers, and consumers can “deposit” food in the “bank”, and people in need would “withdraw it from the bank” (see Figure 3). In this way, the food bank creates a circular approach to

the current food system and makes it more resilient and sustainable while fighting food insecurity in society. For instance, the world’s three largest food bank networks—the European Food Banks Federation, Feeding America and the Global Food Banking Network—reported that, in 2019, around 3.75 million metric tonnes of food, equivalent to approximately 1,292 Olympic swimming pools of food, were successfully recovered.¹⁴ In other words, such a colossal level of FLW can be effectively minimised by diverting food surplus to food banks.

Figure 3: The Structure of a Food Bank



Source: *The Global Food Banking Network*¹⁵


The food banking model has flourished in developed countries, driven by simultaneous aims of feeding people in need and preventing food waste. While there are successful examples of food banks, particularly in G20 nations as depicted in Table 1, challenges often arise from less established and disorganised food banks in developing countries. Consequently,

G20 countries can contribute their expertise in overcoming legal, financial, operational, infrastructure and human resource barriers for food redistribution initiatives via food banks in developing countries.¹⁶ This exchange of knowledge can facilitate the implementation of G20 food banks in developing countries, where food insecurity remains a significant concern.

Table 1: Examples of food banks in Select G20 countries

Selected G20 Countries	Food Banks Prevalence
US	More than 200 members food banks of Feeding America network, representing over 80 percent of food banks in the US, distributed 5.3 billion meals in 2020, (Feeding America, 2021; Gundersen et al., 2011).
Japan	Second Harvest Japan network distributed 2.5 million meals in 2020 (Second Harvest Japan, 2020).
Germany	More than 2,000 food pantries of Tafel distributed 584 million pounds of food in 2019, reaching 1.65 million people (Tafel, 2020).
UK	Prior to the COVID-19 pandemic, approximately 700,000 households utilized the 1,300 Trussell Trust food banks, while at least 1,172 independent food banks operate outside of the Trussell Trust (Trussell Trust, 2021; Independent Food Aid Network, 2020).
France	The French Federation of Food Banks, through 79 food banks, reached 2.1 million people providing 225 million meals in 2020 (French Federation of Food Banks, 2021).
Canada	In 2020, the Food Banks Canada network distributed 63 million pounds of food through 4,751 member organizations (Food Banks Canada, 2021).
South Korea	The Global Foodbanking Network In 2020, 18 food banks of South Korea distributed 880 million pounds of food, reaching over 1.3 million individuals (The Global Foodbanking Network, 2020)

Source: Byrne and Just¹⁷



Thus, a G20 food bank can achieve the following:

- It has the potential to change individual and even societal behaviour towards reducing FLW.
- It will help combat the environmental impacts of agri-food systems¹⁸ and prevent redundant waste of natural resources, such as freshwater.¹⁹
- It can serve as leverage to create a mass movement for responsible consumption.
- It can foster local, regional and global solidarity efforts by increasing awareness about FLW and food security.
- It can contribute to promoting circular economies and fostering community resilience through collective efforts.
- It fits in perfectly with the goals of SDG-2 and SDG-12.

Potential Challenges

- Frame and define an effective working mechanism for the infrastructure, planning and coordination of this bank.
- Address organisational and operational issues, such as

establishing well-furnished warehouses with cold storage facilities; enabling the collection, storage, sorting, packing and delivery of rescued food; finding more affordable and environmentally friendly logistics; launching common web-based platforms and mobile apps for digitalisation; and providing human resources to prevent potential operational disruptions due to a lack of volunteers,

- Overcome concerns of people in need who reportedly experience stigma, embarrassment, frustration, and shame while accessing a food bank as they are often delivered food that is left over or unsold, and past the best-before date.²⁰
- Assess the illusion of functionality and efficiency projected by disguising the dysfunctionality of current food systems and the long-term food deprivation of vulnerable groups.

Although food banks play a crucial role in reducing food waste and providing assistance to vulnerable populations, relying solely on their establishment may not be sufficient to effectively address the pressing issue of food security. Therefore, our subsequent recommendation complements the proposal for the establishment of

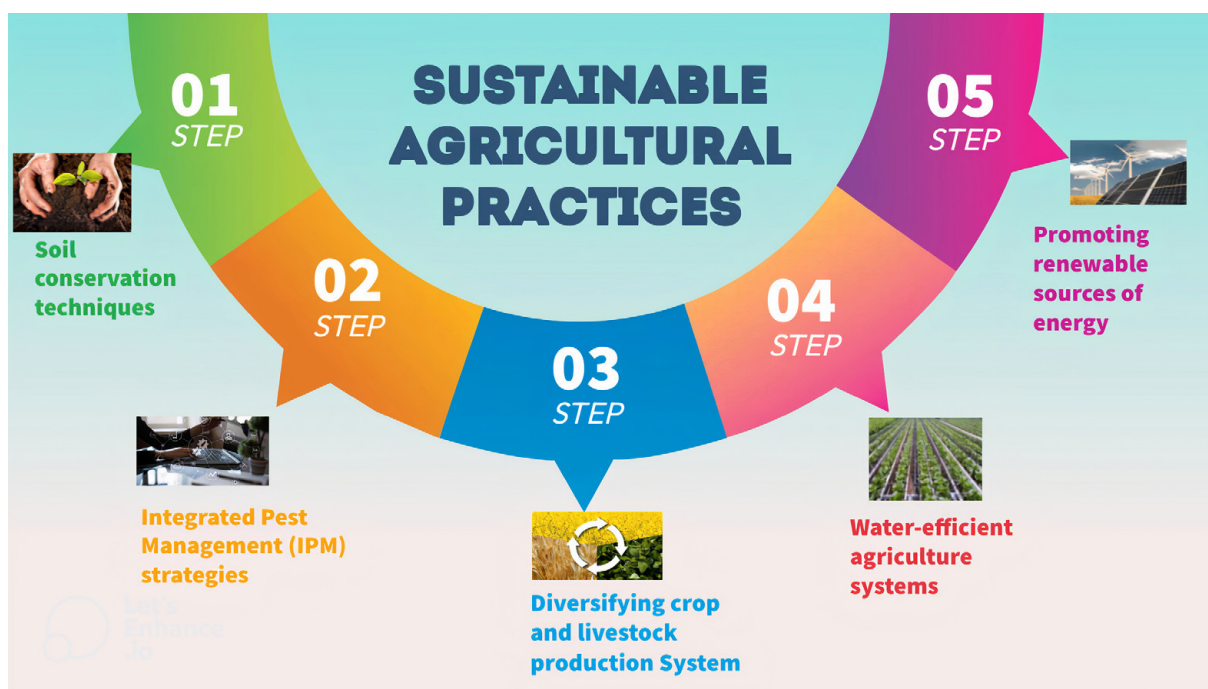
the G20 food bank, accentuating the significance of ensuring short-term food security as a safety net to protect vulnerable groups from experiencing food deprivation. By combining both recommendations, current food systems can be transformed by making them more resilient, equitable,

fair and sustainable.

Implementing sustainable agriculture practices

This brief proposes implementing sustainable agriculture practices through a five-step process (see Figure 4).

Figure 4: Sustainable Agricultural Practices



Source: Wezel et al.,²¹ and Altieri²²



Step 1: Soil conservation techniques

By putting soil preservation methods into practice, such as crop rotation, cover crops, mulching and reduced tillage, there can be a substantial improvement in soil quality and erosion and boost agricultural output. For instance, in India, the use of cover crops like legumes has helped to improve soil fertility, reduce soil erosion and increase crop yields, especially in rain-fed areas,²³ while in Australia, the use of zero tillage in dryland farming has helped to reduce soil erosion, conserve soil moisture and improve soil structure, leading to increased crop yields and reduced water use.²⁴ Reduced tillage can help the health of the soil by greatly reducing soil erosion. Reduced ploughing, in accordance with the FAO, can improve water infiltration by up to 50 percent, decrease soil erosion by up to 60 percent and boost soil organic matter by up to 30 percent.²⁵

Step 2: Integrated Pest Management strategies

Integrated Pest Management (IPM) strategies (such as biological control,²⁶ cultural practices and prudent pesticide use) can lessen the environmental impact of pesticides. In Kenya, using


the larval parasitoid *Cotesia flavipes* as a biological control agent to manage maize stemborer has resulted in reduced pesticide use and enhanced farmer livelihoods.²⁷ IPM has also decreased the use of pesticides and improved plant quality as well as reduced GHG emissions in Europe.²⁸

Step 3: Diversifying crop and livestock production systems

By diversifying crop and livestock production systems, biodiversity and resilience can be enhanced, which can boost the agricultural output and encourage environmental sustainability. Agroforestry, intercropping and mixed farming are common methods to diversify both crop and livestock production systems.²⁹ For example, adapting agroforestry has improved soil fertility and the availability of food and fuelwood in Cameroon,³⁰ while increasing farmers' income, decreasing soil erosion and restoring degraded land in Indonesia.³¹

Step 4: Water-efficient agriculture systems

Water is a valuable and scarce natural resource that complements the production capacity of land. Israel



has been successfully using drip irrigation since the 1970s, where it has increased crop yields by cutting down water consumption by up to 70 percent and improved the quality of its produce.³² Another example is mulching in Zimbabwe,³³ where maize grain yield rose by 17.2 percent and 26.3 percent in the third and fourth seasons, respectively. Mulching also increased soybean production by 42 percent in Zimbabwe.

Step 5: Promoting renewable sources of energy

Utilising renewable energy in agricultural practices contributes to mitigating climate change, improving energy security, increasing access to energy and supporting economic growth. Agrarian practices heavily rely on fossil-fuel-based energy, making it essential to ensure farmers' access to modern, affordable, and sustainable energy

for sustainable agricultural practices. Ground-mounted renewable power plants offer a stable source of income for a period of 25 years, even from uncultivable under-utilized land.

As solar pumps and small-scale solar electricity plants receive subsidies in India,³⁴ more than 3.5 million Indian farmers will now have access to clean energy. Decreasing solar module cost makes solar pumps a viable option for farmers and holds great potential to save 4 billion litres of diesel annually and 5 percent of total GHG emissions. Besides, in the sub-Saharan region, a new generation of agricultural equipment powered by off-grid solar energy is being created for small-holder farmers. The United National Environment Program estimates that every 10 percent increase in farm yield has led to a 7 percent decrease in poverty in Africa.³²

Attribution: Alok Kushwaha et al., "Reimagining Food Security Through Sustainable Agriculture and Reduced Food Waste," *T20 Policy Brief*, July 2023.

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