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# HOW TO MAKE FOOD SECURITY SUSTAINABLE RELATED TO ECONOMIC CRISIS AND PANDEMIC RECOVERY

Review  
Article

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## **Keywords**

*Food security;  
Sustainable development goals;  
Depression;  
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## **JEL Classification**

*H12; L66; Q01; Q16*

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## **Abstract**

*The World is facing its worst economic crisis since the Great Depression. The promotion of sustainable and inclusive economic growth, full and productive employment and decent work for all is undermined by the consequences of the COVID-19 epidemic. Food security is linked to the majority of the United Nations Sustainable Development Goals (SDGs). This study aims to draw attention to the role of the food security objective, which is based on reliable, equitable and sustainable food systems that benefit from modern and equitable agricultural technologies. Food (in)security negatively affects human physical, social and economic development throughout life and is a significant environmental disruptor with serious consequences for planetary health. In this article, the authors propose the links between food security and sustainable development goals taking pandemic crisis into account to gain novel insights on whether and how recovery policies can be implemented simultaneously, which may lead to more nuanced findings in the global solution of SDGs.*

## FOOD SECURITY AND SDGS NEXUS

### INTRODUCTION

To mitigate the negative effects of climate change while providing enough food for a growing population, researchers are working hard on sustainable solutions to save human lives (Máté, Rabbi, Novotny, & Kovács, 2020). The goal of food security is linked to the United Nations (UN) Sustainable Development Goals (SDGs), which are based on sound, equitable and sustainable food systems that benefit from modern and equitable agricultural technologies (Pérez-Escamilla, 2017). Food security exists when all people have physical and economic access to adequate, safe and nutritious food that meets their dietary needs and food preferences for active and healthy life (Clay, 1996).

However, food security is currently not met for billions of people worldwide. The notion of food insecurity is the limited availability of adequate and safe food, or the uncertain ability to obtain food in a socially acceptable manner due to lack of resources (Bickel, Nord, Price, Hamilton, & Cook, 2000). 9% of the world's population is severely, and one-in-four people worldwide (cc. 1.9 billion) is moderately insecure (Tiseo, 2020). Based on the Global Hunger Index (GHI) concept (Wiesmann, 2006) and trajectories the levels of hunger are still serious issues in 51 countries and still extremely alarming with failing to achieve low hunger by 2030 (see Figure 1).

Moreover, food insecurity can negatively affect human, physical, emotional and cognitive development throughout life, and causes significant social and environmental damages and has serious consequences for the health of the planet (Smith, Rabbitt, & Coleman-Jensen, 2017). Without rapid progress in reducing and eliminating hunger and malnutrition by 2030, the sustainable development goals related to food security cannot be achieved. At the same time, achieving other SDGs will pave the way for the eradication of hunger and extreme poverty (Byerlee & Fanzo, 2019).

None of the previous studies has examined and predicted the complex socio-economic impacts of global pandemic recovery and taking sustainable development goals into account. In this article, the authors propose to explore the links between food security and SDGs to gain new insights into whether and how recovery policies can be implemented simultaneously. The novelty of this approach is to treat the phenomenon of COVID-19 in a contextual way, which may lead to more nuanced findings of the global solution of SDGs

Sustainable development goals offer a vision of a fairer, more prosperous, peaceful and sustainable world in which no one is left behind (FAO, 2015). Food is a fundamental linkage between people and the planet and a future path to inclusive and sustainable economic growth. Thus, the fight against and end poverty (SDG1) must also be fought in rural areas, where people depend on farming, fishing or forestry for their income and food. Hunger is no longer an issue of insufficient global supplies, but mainly for the lack of producing or buying food. Agricultural growth in low-income and agricultural farms is at least twice as effective in reducing hunger and poverty as growth in other sectors.

Investing in rural development, building social protection systems, and increasing the income of critical drivers for (local) family farmers are essential to achieving inclusive and equitable growth while addressing the root causes of poverty and hunger. Improving rural livelihoods will also curb rural migration and increased urban poverty. The severe long-term consequences of the COVID-19 epidemic could push an additional (cc. 207) million people into extreme poverty, exceeding the amount by more than one billion and the global extreme poverty ratio will be between 6.7% and 7.0% by 2030 (Lakner, Mahler, Negre, & Prydz, 2019). This suggests that the COVID-19 epidemic is likely to delay the World Bank's poverty target by six-seven years (Figure 2).

Malnutrition means high economic and social costs for society. While two billion people do not consume enough vitamins and minerals, the rate of obesity has doubled in the last 30 years (Potori, Garay, & Popp, 2011). An important step in ushering in a new era of sustainable development is the committed global zero hunger target (SDG2), which is based on a comprehensive approach to tackling food security and malnutrition while promoting sustainable agriculture. Given the rising pressure on global ecosystems and food production must be achieved in a sustainable and environmentally friendly approach. Recent evidence suggests that climate change, biodiversity loss and other pressures have already reached the changes that threaten the capacity of the Earth's ecosystems (Brown, 2009).

Sustainable Consumption and Production (SDG12) to sustainably feed the world, producers need to produce more food while reducing negative environmental impacts, such as loss of soil, water and waste of nutrients, greenhouse gas emissions (GHGs) and decline of ecosystems (Popp & Lakner, 2013). Consumers need to be encouraged to switch to a nutritious and safe diet with a lower environmental footprint, and those who farm, keep

animals, fish, manage forests and run agribusinesses are key to global food security and the health of the world's ecosystems (Frongillo, Nguyen, Smith, & Coleman-Jensen, 2017)

The inclusive approach to fisheries and aquaculture specifically targeted at small-scale artisanal fishers is well reflected in SDG14. Sustainable management of ocean ecosystems (oceans, seas and marine resources) is essential to ensure sustainable fisheries (Taniguchi, Masuhara, & Burnett, 2017). Governance must balance the priorities of growth and conservation with industrial and artisanal fisheries and aquaculture, ensuring equitable benefits for communities. Aquaculture is one of the fastest-growing sector and can produce the nourishment needed to meet the growing population's need for safe and highly nutritious and eminent food (Pinstrup-Andersen & Pandya-Lorch, 1998).

The sustainable use and management of terrestrial ecosystems, forests, mountains, land and soil, and biodiversity are well articulated in the composition of SDG15. Land and forests life provide a decent livelihood for millions while providing clean air and freshwater, conserving biodiversity and mitigating climate change (Agarwal, 2018). Forests can absorb significant amounts of carbon dioxide emissions from their biomass, soil and products (Branca, Lipper, McCarthy, & Jolejole, 2013). While modern food systems are highly dependent on fossil fuels, sustainable forests provide construction, heating and equipment in a renewable way (Finco & Doppler, 2010). Natural, recyclable, reusable and biodegradable wood is a vital part of a sustainable future, and an addressing infrastructure and energy needs (Tuomisto, Hodge, Riordan, & Macdonald, 2012).

Growing global populations, urbanization, and declining natural resources mean more people are feeding on less water, agricultural land, and rural labour (Rosegrant et al., 2009). Meeting the growing demand for food, water and energy will require a shift to a more sustainable approach to consumption and production, with more efficient agriculture and food supply systems (de Amorim et al., 2018). How to increase food production using less water (SDG6) is one of the grand challenges of the future (Omenn, 2006). Plants and livestock use 70 per cent of all water abstractions, and up to 95 percent are developing countries and by 2025, 1.8 billion people are projected to live in countries or regions with absolute water scarcity (Rosegrant et al., 2009). Access to affordable, reliable, sustainable and modern energy (SDG7) plays a key role in achieving food security and better nutrition due to energy prices (Taghizadeh-Hesary, Rasoulnezhad, & Yoshino, 2019). Food systems, which currently consume 30 percent of the world's energy, gradually decouple from fossil fuels to deliver more food with less and cleaner (green

energy (Parry, 2012). Agriculture has a major role to play in the response to climate change (SDG13) (Mikulčić, Duić, & Dewil, 2017). While rising temperatures pose a real threat to global food production, but investment in all sectors of agriculture can simultaneously support adaptation to and mitigation of climate change (Lobell, Schlenker, & Costa-Roberts, 2011), while improving the livelihoods of rural people (Timmer, 2005).

## **SDGS AND COVID-19 PANDEMIC RECOVERY**

Developing countries are now threatened by a pandemic, not only as healthy but also as a devastating social and economic crisis for years. According to the UN, income loss is expected to exceed \$220 billion in developing countries, and an estimated 55% of the world's population does not have access to social protection. These losses have repercussions on societies; it has an impact on education, human rights and, in the most severe cases, basic food security and nutrition. In order to support the poorest and most vulnerable countries, a global framework is issued for an immediate socio-economic response to COVID-19, calling for increased international support and political commitment to ensure that people ubiquitously have free access to core services and social safety (United Nations Environment Programme, 2020).

World Food Aid Program provides a critical lifeline to 87 million vulnerable people worldwide. In the light of the effects of the epidemic on the food and agriculture sector, immediate action is needed to ensure that food supply chains survive to mitigate the risk of major shocks with a significant impact on all, especially the poor and most vulnerable. To address these risks, the Food and Agriculture Organization (FAO) calls on countries to meet the immediate food needs of vulnerable populations. The Global Humanitarian Response Plan also steps up social protection programs; maintain global food trade; keep the gears in the household supply chain moving, and support the ability of farmers to increase food production (United Nations Office for the Coordination of Humanitarian Affairs - OCHA, 2020).

The availability and accessibility of water, sanitation and hygiene services (WASH) are also essential in the fight against the virus and in preserving the health and well-being of millions. COVID-19 will not stop without access to safe water for vulnerable people and the impact may be significantly greater on urban poor living in slums. UNICEF seeks support for core facilities, especially in places where the water is not treated or polluted. In response to the outbreak of COVID-19, the International Organization for Migration

(IOM) is adjusting its continued support to affected, vulnerable, low-capacity and fragile countries to monitor WASH services and infection prevention in health facilities (United Nations, 2020b).

People live mainly in sub-Saharan Africa without access to electricity, and hundreds of millions more have access to very limited or unreliable electricity. It is estimated that only 28 percent of health care facilities have access to reliable electricity in sub-Saharan Africa, yet energy is critical to keeping people at home and operating life-saving equipment in hospitals (Blesh, Hoey, Jones, Friedmann, & Perfecto, 2019). Special Representative of the UN Secretary-General for Sustainable Energy outlined that energy solutions should be a priority for health clinics and first aiders; contacting vulnerable consumers; increase reliable, uninterrupted and sufficient energy production to prepare for a more sustainable economic recovery (United Nations Environment Programme, 2020).

As countries move to rebuild their economies after COVID-19, recovery plans can transform the 21<sup>st</sup> economy in a green clean, healthy, safe and resilient pathway (De Laurentiis, Hunt, & Rogers, 2016). Climate-positive actions have also suggested that governments rebuild their economies and societies. For instance, the investment needed to accelerate the decarbonisation of all aspects of economies (Lechtenböhmer, Nilsson, Åhman, & Schneider, 2016). Green jobs, sustainable and inclusive growth can make societies and people more resilient with the green economy through a fair and inclusive transition (Acelandu, Șerban, Țircă, & Badea, 2018). All climate risks must be and post-pandemic recovery plans need to trigger long-term systemic shifts that change the trajectory of atmospheric carbon dioxide (CO<sub>2</sub>) levels (Patkós et al., 2019).

Ocean protection and action must not stop while dealing with the COVID-19 epidemic. The health of the ocean is closely linked to the future of human well-being as well. A pandemic provides an opportunity to revive the ocean and begin building a sustainable ocean economy (Makarieva, Gorshkov, & Li, 2008). Temporary cessation of human activities and a reduction in travelling mobility and resource requirements as a result of the COVID-19 epidemic could create an opportunity needed for the marine environment to recover.

The COVID-19 epidemic highlights the need to address threats to ecosystems and wildlife. In 2016, the United Nations Environment Program (UNEP) identified the increase in zoonotic epidemics worldwide as a matter of concern (Figure 3). More specifically, (UN Department of Economic and Social Affairs, 2020) pointed out 75% of infectious diseases in humans are zoonotic and these diseases are closely related to the health of ecosystems. The

answer extends to working to make economic recovery packages resilient to future crises and to modernize global environmental governance. To prevent, halt and reverse the degradation of ecosystems worldwide, the UN has also launched a Decade on Ecosystem Restoration (2021-2030) (United Nations, 2020a).

## CONCLUSIONS

The World faces the worst economic regression since the great depression. Promotion of sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all is violated by the COVID-19 pandemic implications. Without rapid progress in reducing and eliminating hunger and malnutrition by 2030, the Sustainable Development Goals (SDGs) cannot be achieved. At the same time, completing other SDGs will pave the way for the eradication of hunger and extreme poverty. This requires investment in pro-poor agriculture and social protection measures in sustainable agriculture and rural development to lift people out of the chronic malnutrition and poverty immediately.

The current global economic and pandemic issues is an opportunity for a profound, systemic transition to a more sustainable economy that benefits both people and the planet. The beginning of COVID-19 crisis has underlined the relationship between humans and nature and revealed the fundamental tenets of compromise that constantly faced with. Humans have unlimited needs, but the planet has a limited ability to meet them. COVID-19 can be a catalyst for social change and a chance to rebuild better and shift production and consumption patterns towards more sustainable practices. Governments around the world have spent considerable time and effort in recent years to develop plans that will create a safer and more sustainable future for their citizens. Taking these on board as part of recovery planning can support the world better recover from the current pandemic.

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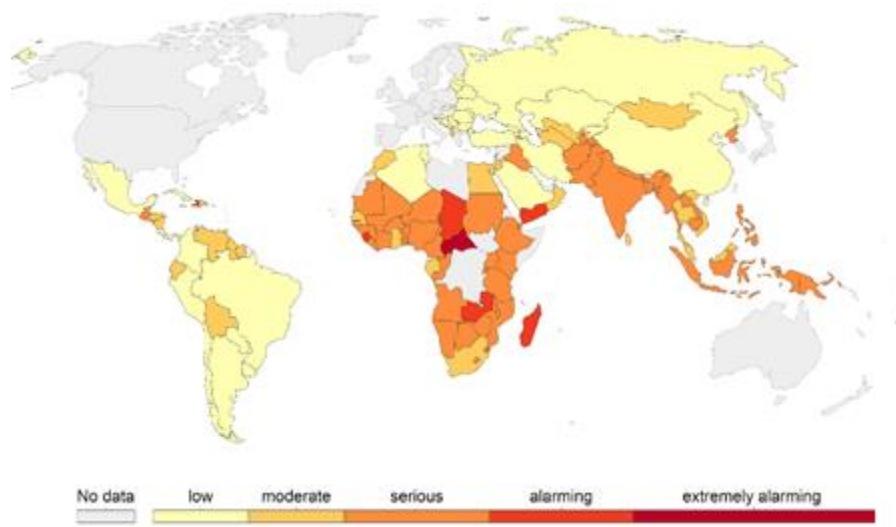


Figure 1  
**Global Hunger Index in 2018 Worldwide**  
*Source: ACTED (2018)*

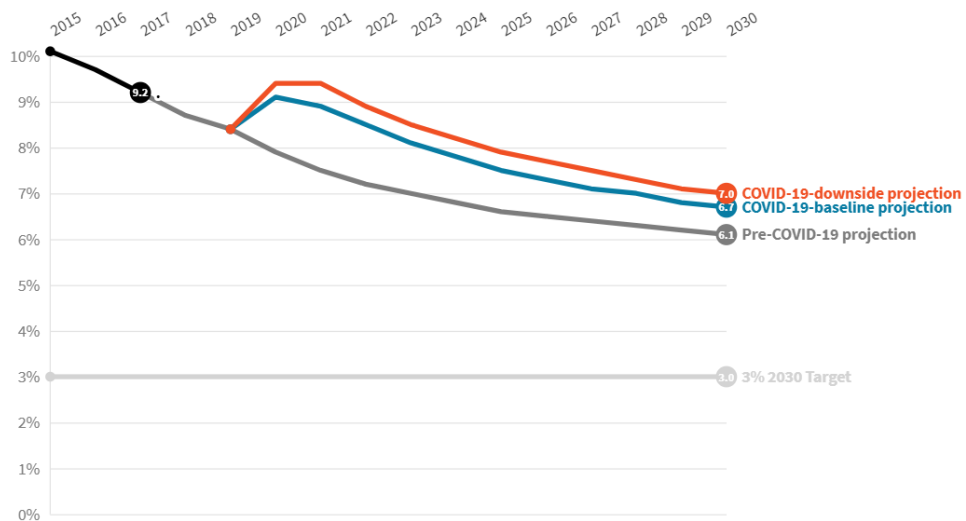


Figure 2  
**Projection of Global Extreme Poverty Rates (%) and COVID-19 Trajectories**  
*Source: Lakner et al. (2019)*

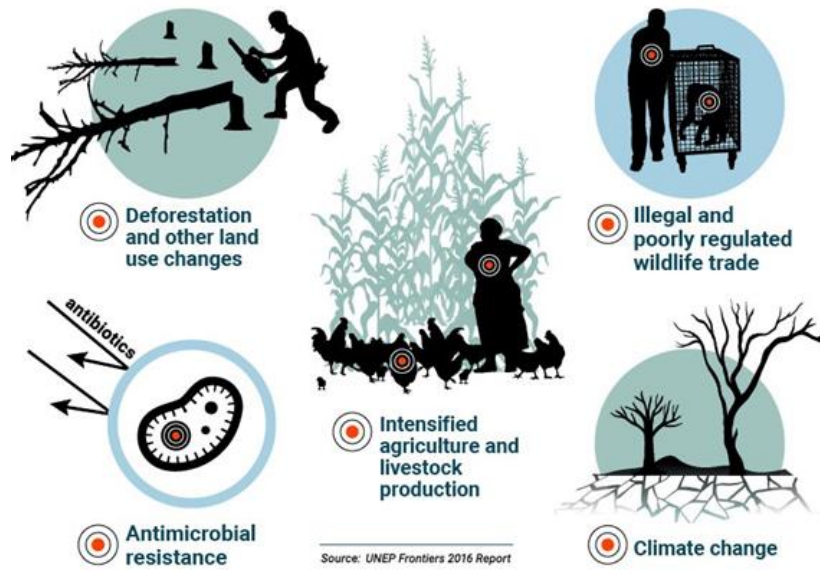


Figure 3  
**Diseases Transmitted from Animals to Humans Increasing Zoonosis Emergence**  
*Source: UN Department of Economic and Social Affairs (2020)*