

## Repercussions involved in global food security during unprecedented times of COVID recession

NK Prasanna<sup>1,2\*</sup> and SK Varshney<sup>3\*</sup>

<sup>1</sup>CSIR- National Institute of Science Communication and Policy Research, (NIScPR) New Delhi

<sup>2</sup>Academy of Scientific and Innovative Research (AcSIR) New Delhi

<sup>3</sup>Department of Science and Technology (DST), New Delhi

Corresponding authors: prasanna@niscpr.res.in; skvdst@nic.in

In the current COVID-19 pandemic the intertwined relationship between malnutrition and poverty prop up the risk of food insecurity which causes extreme hunger. In spite of social and economic progress, the global burden of malnutrition continues to be unacceptably high. Nutritional status, human capital, and economic position all have an important link. Malnutrition has a negative impact on people's physiological and mental capacities, which reduces productivity and makes them and their nations more vulnerable to poverty. The inequalities in reduced access to the health care system and food insecurities like inadequate access to food, inadequate supply, and the inappropriate use of food are directly linked to food insecurity are serious public health challenges. No poverty, zero hunger, and good health and well-being are the top three UN Sustainable Development Goals. The COVID-19 situation is expected to have an impact on all three of these objectives. Current efforts to promote the availability and accessibility of healthy food and water to disadvantaged communities, as well as to avoid fraud and misbranding, should be improved. There is a need to develop current healthy standards and eating pattern suggestions that are practical to follow during a pandemic. Public policies focused on ensuring the human right to adequate food must be revamped and implemented till actual commodities should reach the needy, for effective population policies in contexts of poverty is need of the hour. This article aims to explore food insecurity among people from the socially disadvantaged and vulnerable groups and impoverished families during the COVID-19 pandemic with special reference to India.

**Keywords:** COVID-19, Food security, Health, Malnutrition, Unprecedented times, Zero hunger

### Introduction

Markets have crashed in step with COVID-19 in the context of second and third waves. The rising global insecurity of food made 11 people die every minute, according to an Oxfam report.

Some of the world's worst hunger hotspots include Afghanistan, Ethiopia, South Sudan, Syria, Brazil, India, Sahel and Yemen continue to be battered by conflict and have experienced a surge in extreme levels of hunger since the year 2020 (1) According to the 2019 edition of the State of Food Security and Nutrition, 690 million people globally go to bed hungry every night. A well-balanced dietary intake is critical for better health outcomes while a disease progresses and recovers (2-3). Across the planet, the UN report forecasts, the COVID-19 pandemic could tip over 130 million more people into chronic hunger by the end of 2020. (4) One in six children in the US is food insecure. 14% of the Indian population is undernourished and 42% of the Afghanistan population is hungry. In India mounting COVID-19 infections, severely burdened the health care system as well as income inequalities, particularly migrant farm workers who were forced to leave their crops in the field to rot. Unprecedented challenges during this pandemic have tested our resilience as a scientific community and as a nation.

It astonishes that while the rate of food insecurity is on an increase, the rate of food wastage and the raise of obesity at the same time operating hand in hand. The national GDPS and food prices have been increasing. Several relevant statistics are soaring high but buying capacity of the poor remains the same. Who do we blame? Can the pandemic be blamed for everything? The COVID-19 pandemic just re-emphasized the need to augment an already existing demand for building hunger resilient communities.

Figure 1 shows more than half of those living with severe food insecurity were in Asia; nearly 40% were in Africa. The remaining 10% were split between the Americas, Europe and Oceania. Around 697 million people have suffered from food insecurity across the length and breadth of the globe. The majority of people living in Asia was largely food insecure, hungry and undernourished, about 40% were in Africa and the remaining 10% were split between the Europe, Americas and Oceania.

The 1948 Paris accord of the United Nations General Assembly proclaims the universal declaration of human rights. Article 25 of the Universal Declaration of Human Rights states that every individual has the right to standard of living with adequate food to every individual and for the family [5].

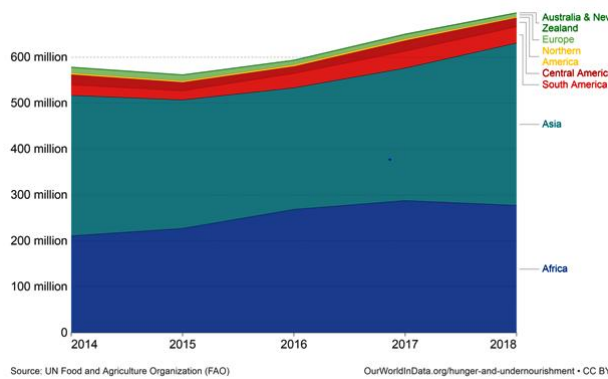


Fig. 1 — Hunger and Undernourishment-Number of Severely food insecure people by region

President Franklin D Roosevelt, on Jan. 6, 1941, highlighted global food concerns in his Annual Message to Congress (S. Rosenman ed., 1941). U.S. President Clinton on World Food Day 1998 referred to the right to food as the most basic human right. Eight decades later, unfortunately, the fundamental right to food is still not binding by law (6-7).

Here we would like to emphasize the 3 pillars of right to food 1) Food availability 2) Food adequacy 3) and Food accessibility. When we talk about food availability and food adequacy what comes to our mind? Increase food production, sustainable production, organic production, and green revolution occupy the centre stage. The Indian state of Punjab experimented with a high yielding variety of seeds with good results. Whenever we think about hunger and food insecurity the only dimension we can think about it is improving food production. Farmers in Punjab, just like around the world, employ a high yielding variety of seeds, chemicals, fertilizers and pesticides. Punjab was typically known as a wheat-producing state which shifted to paddy which demanded huge quantities of water. Over-exploitation of groundwater thus shrinks agricultural output combined with the onslaught by a variety of crop diseases further complicating the Punjab paddy dilemma.

At 42 percent of the labor force, agriculture is the single largest employer. Ironically, it produces only 18 percent of GDP. Over 86 percent of all agricultural holdings have an inefficient scale (below 2 hectares). Suppressed incomes due to low agricultural productivity prompt rural-urban migration. Migration is circular, as workers return for some seasons, such as harvesting.(8)One of the largest, serious, and significant impacts we are facing on the environment

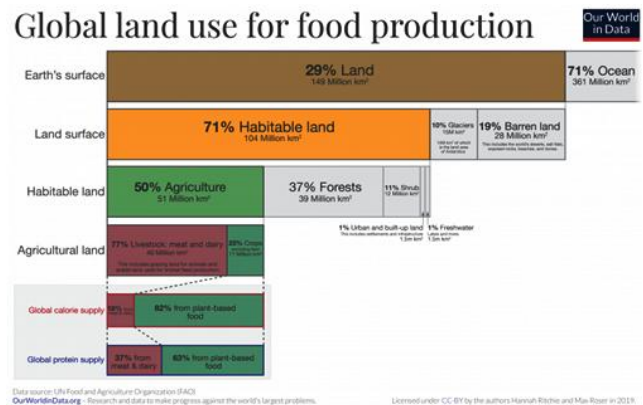


Fig. 2 — Global land use for food production

is due to the expansion of agriculture. In recent decades, the acceleration of a global agricultural expansion has resulted in a significant devastating negative impact leading to deforestation and the destruction of biodiversity. It has revolutionized habitats and has proved as one of the substantial coercing for biodiversity. According to the IUCN Red List, 28000 species were evaluated to be threatened with extinction and for 24000 of them, agriculture is a threat. (8)

The majority of the world's habitable land is pre-owned by agriculture. Most of the previous studies have already shown a global distribution of land. An analysis has provided a coherent and comprehensive overview of all aspects of understanding about how humans have transformed global land use in recent centuries (Fig. 2). Despite this uncertainty, trends and challenges tend to converge on an estimate of close to half of habitable land being used for agriculture (7).

We often pride ourselves in seeking answers rather than ask piercing questions. Though our focus has always been on food production, we have hardly seriously thought about food in terms of its accessibility and food wastage. While being one of the world's largest rice exporter's famine is familiar enough. India has been able to increase its food production many folds, but it did not solve food insecurity: Did we solve hunger? Most Indians struggle with their daily food access due to the continuously increasing prices of food grain, vegetables, etc. (5) 35% of the Indian children are undernourished. The International FAO claimed the world produces enough food with adequate availability of food. So what is the problem? The problem is that the food is not accessible.

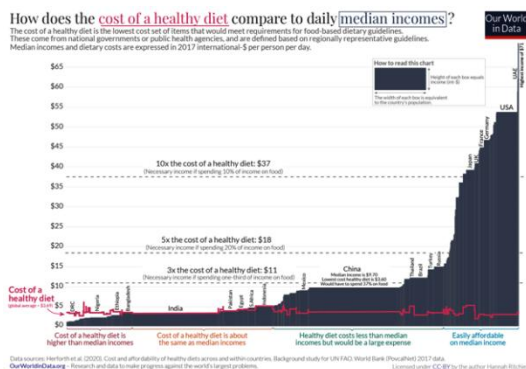


Fig. 3 — How do Incomes around the world influence the price of global healthy nutritious dietary intake?

The very streamlined, extremely well managed, well- equipped US child nutrition program is a great example of resilience when compared to other countries. But today there are several nations who do not have national school feeding programs. The children in those countries rely on food aid at the time of crisis, natural disasters, and pandemics. An anonymous person once said there is more food in a rich man's shampoo than on a poor man's plate. We are privileged enough to feed our children with nutritious food. Food and Agriculture Organization estimates the amount of food waste that we produce accruing to 1 trillion dollars.

A trillion dollars worth of food can treat double the current hungry population. Thirty percent to 40% of the global food supply goes to waste every year. The goal of the Zero hunger initiative is to end hunger and ensure safe, nutritious and sufficient access to food by all people. 2.3 billion population had no regular access to food before the Covid-19 pandemic. Much before the COVID-19 pandemic, we were not placed any better in terms of our commitments to end world hunger and malnutrition. The situation is sought to be corrected in all its forms by 2030. Now, the pandemic has made this significantly more challenging," the UN report said (11) Even the development of cost-effective COVID-19 vaccines with global cooperation, leadership, and health diplomacy along with implementing impactful public policies that can ensure fair and equitable access of vaccines for every country of the world during the covid-19 outbreak. (12-17).

Figure 3 shows how do incomes and food prices around the world influence in accordance with the price of a healthy diet? In the poorest countries, the cost of a balanced healthy diet is higher than the

median income. The median income is the income amount that divides a population into two equal groups, half having an income above that amount, and half having an income below that amount.(10,18-20) Even though, if the average person in these countries spent all of their money on food, a basic healthy nutritious diet would be still much more expensive and unaffordable. India, among other countries, would count as approximately equal to the median income as far as dietary costs are concerned where people would need to spend all of their income on food to manage a healthy diet.

We are living in a world where one tweet can change the face of stock market trends. In order to find the solution for hunger, among other things, we need to 1) reduce food wastage 2) empower the poor 3) update our strategies and 4) quality agro products equally important. The purpose of this article is not to present a menu of solutions but rather natural resource management which will be needed to be shaped up keeping in mind a multi-strategy plan.

## Conclusion

People across nations have struggled with these issues for several years. Now we need to change gears. We need to update our strategies that set its direction and initiate the much-required changes with more capacity-building actions. It provides public partnership framework guidance and support solutions to make the poor resilient in a way that they have access to money through government schemes and most importantly makes the fundamental right to adequate quality food binding by law. The Government of India has initiated several policies and schemes to support the most affected vulnerable sections of the Indian society to combat the vicious hunger and malnutrition cycle by 2030. Efforts and policies instituted by the Government of India have to be urgently acknowledged. However, there are still numerous shortcomings evident in relation to ground reality, in the global policies, plans, and schemes with regard to their implementation.

## Funding

The authors received no funding in relation to this article.

## Conflict of Interest

All authors declare that there exist no commercial or financial relationships that could, in any way, lead to a potential conflict of interest

## References

1. <https://www.oxfam.org/en/press-releases/six-fold-increase-people-suffering-famine-conditions-pandemic-began>
2. India: How COVID-19 Accelerates Malnutrition in Women and Children (<https://reliefweb.int/report/india/india-how-covid-19-accelerates-malnutrition-women-and-children>)
3. Slawson D. L., Fitzgerald N. & Morgan, K. T. Position of the Academy of Nutrition and Dietetics: the role of nutrition in health promotion and chronic disease prevention. *J. Acad. Nutr. Diet.* 113, 972–979 (2013).
4. <https://www.who.int/news/item/13-07-2020-as-more-go-hungry-and-malnutrition-persists-achieving-zero-hunger-by-2030-in-doubt-un-report-warns>
5. <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=23970&LangID=E>
6. <http://www.fao.org/3/a0511e/a0511e.pdf>
7. <http://www.fao.org/3/i2250e/i2250e.pdf> Right to food: making it happen progress and lessons learned through implementation
8. Brookings The impact of Covid-19 and the policy response in India.
9. Our World in Data <https://ourworldindata.org/global-land-for-agriculture>
10. [https://en.wikipedia.org/wiki/Median\\_income](https://en.wikipedia.org/wiki/Median_income)
11. <https://en.gaonconnection.com/food-security-hunger-poverty-child-nutrition-africa-conflict-asia-covid19-health/>
12. Varshney SK, Prasanna NK. Vaccine diplomacy: Exploring the benefits of international collaboration. *Curr. Trends Biotechnol. Pharm.* 2021; 15: 110–114. doi:10.5530/ctbp.2021.1.12.
13. Sharma J, Varshney SK. India's vaccine diplomacy aids global access to COVID-19 jabs. *Nature India* 2021. doi:10.1038/nindia.2021.31
14. Khan Sharun, and Kuldeep Dhama. COVID-19 vaccine diplomacy and equitable access to vaccines amid ongoing pandemic 23 April 2021 <https://doi.org/10.1016/j.armed.2021.04.006>
15. Chattu VK, Pooransingh S, Allahverdi-pour H. Global health diplomacy at the intersection of trade and health in the COVID-19 era. *Health Promot Perspect* 2021;11:1–4. doi:10.34172/hpp.2021.01
16. Javed S, Chattu VK. Strengthening the COVID-19 pandemic response, global leadership, and international cooperation through global health diplomacy. *Health Promot Perspect* 2020;10:300–305. doi:10.34172/hpp.2020.48
17. Lancet Commission on COVID-19 Vaccines and Therapeutics Task Force Members. Operation Warp Speed: implications for global vaccine security. *Lancet Glob Health* 2021 Mar 26 S2214-109X(21)00140-6. doi:10.1016/S2214-109X(21)00140-612-17
18. [http://www.fian.org/fileadmin/media/publications\\_2015/The-Right-to-Adequate-Food-in-India-2008.pdf](http://www.fian.org/fileadmin/media/publications_2015/The-Right-to-Adequate-Food-in-India-2008.pdf)
19. <https://ourworldindata.org/diet-affordability>
20. [https://mpr.ub.unimuenchen.de/23661/1/Food Insecurity in India Natural or Manmade.pdf](https://mpr.ub.unimuenchen.de/23661/1/Food%20Insecurity%20in%20India%20Natural%20or%20Manmade.pdf)