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Review

Sustainable Nonfarm Approaches to Achieve Zero Hunger and Its Unveiled Reality

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ABSTRACT: Millions of people worldwide are deprived of sufficient, safe, and nutritious food required for an everyday and healthy life. The hunger crisis is worsening over time, even though many attempts have been made to minimize it. Increasing world population and competition for natural resources, climate change, natural disasters, urbanization, poverty, and illiteracy are the main causes that need to be addressed to reduce the hunger crisis. Various nonfarm technologies are being used to eradicate hunger but their long-term impact on the environment should also be considered. The real sustainability of several novel technologies being implemented to deal with hunger is an issue to tackle. This paper discusses the potential applications of storage facilities, underutilized crops, waste valorization, food preservation, nutritionally enriched novel food products, and technological advancement in food processing to achieve zero hunger. An attempt has also been made to address the sustainability of various nonfarm technology utilized to minimize the global hunger crisis.

KEYWORDS: *sustainable nonfarm, zero hunger, underutilized crops, waste valorization, food preservation*

INTRODUCTION

Currently, the sustainability of food and agricultural systems is mainly influenced by the growing population worldwide. Currently, the world population is more than 7.7 billion and is predicted to reach 10 billion by the year 2050, growing at a rate of approximately 1.07% annually.[1] Urbanization is also expected to reach 58% of the total world population by the year 2070.[2] According to The State of Food Security and Nutrition in the World 2022, the number of people suffering from chronic hunger has increased to 828 million in the year 2021.[3] As per Global Report on Food Crises 2022, there were globally 193 million people suffering from acute hunger in the year 2021.[4] In 2015, the United Nations established seventeen Sustainable Development Goals, one of which is "Zero Hunger" (SDG2). Despite making several efforts in the past decade it is predicted that there will around 670 million people suffering from hunger in the year 2030, which is around 8% of the global population similar to that in the year 2015 when SDG 2 was launched.[4] The pandemic has also played a devastating role in adding up to 30 million more people to the total hunger-affected people by 2030.[5] So effective actions are needed to combat this global hunger issue.

The agriculture system is responsible for 30% emission of greenhouse gases globally. It indicates that an integrated solution is the need of the hour which can mitigate both environmental changes and hunger issues. Social, environmental, and economic sustainability is also a major concern while dealing with the global hunger crisis. Political intervention and governance can significantly help in dealing with food hunger worldwide. Various measures are being taken by the governments around the world to ensure food and nutrition security. For instance, the Indian government is promoting the production of millets and has suggested that the United Nations announce 2023 as the International Year of Millets to make Indian millets and its products available at global scale.[6] Keeping this in view, on March 5th, 2021, United Nations's General Assembly announced 2023 as the International Year of Millets.[6] Obtaining sustainability in food production, processing, preservation, and packaging is an important and complicated task. Approximately 30% of the total food produced gets wasted annually.[7] This food loss can be alleviated by using proper storage facilities, packaging, processing, and waste valorization. Various underutilized crops have good nutritional properties and can play a significant role in reducing the hunger crisis.[8]

This paper discusses the potential of nonfarm techniques, such as the utilization of underutilized crops, storage facilities, packaging systems, waste valorization, and novel food, in reducing global hunger. The long-term sustainability of these techniques has also been discussed in a separate section. To

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