

Opinion Article

Global food security and food systems sustainability

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Received: 23-May-2022, Manuscript No. FAFT-22-65817; Editor assigned: 26-May-2022, PreQC No: FAFT-22-65817 (PQ);
Reviewed: 10-Jun-2022, QC No: FAFT-22-65817; Revised: 16-Jun-2022, Manuscript No: FAFT-22-65817 (R). Published: 23-Jun-2022

DESCRIPTION

Food production may help to evaluate and plan policies aimed at achieving food security and sustainability, which are critical to achieving numerous Sustainable Development Goals (SDGs). Since the start of the Green Revolution, the global agricultural system's output has skyrocketed, enhancing food security for poor populations while also meeting the nutritional demands of an increasingly prosperous globe. This unexpected utility has also resulted in increased environmental costs. While global agriculture confronts several challenges, the most astonishing test of food security may be the impact of horticulture on our environment.

Currently, the global agricultural region, which refers to the executives and land clearance, associated with horticulture, understanding country specialization trends in numerous Sustainable Development Goals (SDGs). To use complex systems analysis to characterize the global food production system in order to rank items according to their capability needs and nations according to their competitiveness. There are two distinct groupings of food producing countries that includes countries with established agricultural systems and the other that includes countries with less developed agricultural systems. The long-term stability of these two groups demonstrates ongoing disparities in specialization patterns between countries. Agricultural production has a detrimental influence on food supply, food security, and the long-term viability of food systems. Countries' competitiveness and the coherence of their diversification patterns boost per capita food supply and security the trade-off between ensuring food security and enhancing sustainability, which must be taken into account when creating or implementing policies to achieve the SDGs. Given rising food needs and the continuation of poverty and under nutrition, the issue of food security has grown more prominent on global agendas. There is a lot of interest in identifying significant drivers because of the need to address

food security, especially in emerging nations with asymmetric agricultural systems including smallholder and industrial agriculture. The key to global sustainable development is striking a balance between biodiversity protection and food security. Food security in the face of climate change, changing crop water requirements as a result of rising temperatures and changing precipitation patterns reduce crop potential and output while increasing the cost of water availability throughout the agricultural landscape. Under these conditions, switching to substitute crops that need less water, have higher yields, or have more biological material per unit of water is crucial for long-term farming. With ramifications as a staple meal for people and a significant feed crop for livestock.

Crop agriculture and food production are continually face with climatic problems that make it difficult to provide safe, healthy food. These difficulties underscore the need of innovation that leads to superior agricultural technology capable of constantly improving yields despite abiotic and biotic pressures. Innovative plant breeding methods, particularly gene editing, have demonstrated enhanced crop yields and the potential for increased yields. Recent advancements in gene editing's application in the pharmaceutical industry may provide chances to lessen regulatory requirements. Due to changing climatic circumstances, modern agriculture has several obstacles, which eventually lead to health issues, food safety issues, and foodborne infections. The loss of organic matter and the emission of greenhouse gases, over-application of fertilizers, erosion, pollution, acidification, salinization, and the loss of genetic diversity are all examples of this degradation. This continual soil deterioration is reducing soils' long-term potential to deliver services to humans, including future food production, as well as harming the ecosystem. It is critical that the global civilization does not become tunnel vision by focusing primarily on the near-term advantages of soils, such as food supply. Failure to recognize the importance of soil in more intensive agricultural systems would surely have major ramifications for mankind, and it will be seen as a failure to address intergenerational equality.

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