Science Societies

Societies publish cross-disciplinary virtual issue on food security

Authoritative collection of papers tackle the science behind feeding the world

By Alison Jennings

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- All ASA, CSSA, and SSSA journals were invited to participate in a virtual issue on enhancing global food security.

- This joint collaboration published 29 high quality scientific studies and reviews that discuss crop genetics, smart technology, agricultural management, soil health, and more.

Are you lucky enough to know where your next meal will come from?

For many, access to food isn't as simple as driving to the store to pick up next week's groceries. Food security (and its contrary, food insecurity) are highly complex, highly challenging issues that have plagued the world for millennia.

Centuries ago, early humans gradually adopted agricultural practices to better feed their growing populations. Flash forward to now: We can produce a much, much larger volume of food than before, but despite this, access to nutritious food and clean water still isn't universal. Multiple factors expose the most vulnerable populations to the effects of food insecurity, from extremes such as famine and malnutrition to more insidious effects like fatigue, illness, and other chronic health conditions.

The idea around the "right to food" has evolved over the past few decades. The term "food security" was first coined in 1974 at the World Food Conference where it was

defined in terms of basic food supply—when there is “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices.” The definition has since changed, shifting from pure availability to a question of access and an emphasis on quality, nutritious food. In 1996, the World Food Summit defined food security as a concept that “exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Shifts in official policy thinking showcase our evolving understanding of food security as a complex, multidimensional concept—that likely requires multiple different approaches to solve. Because how do you make sure that billions of people have enough (quality) food to eat?

On top of it all, with modern times comes more, modern problems: War, instability, the economy, climate change, population displacement—all these exacerbate and spread hunger and malnutrition. Climate change, for example, is a large contributor to food insecurity due to its effects on agricultural, storage, and shipping processes (to name a few examples) and has been a leading cause in a recent rise in global hunger.

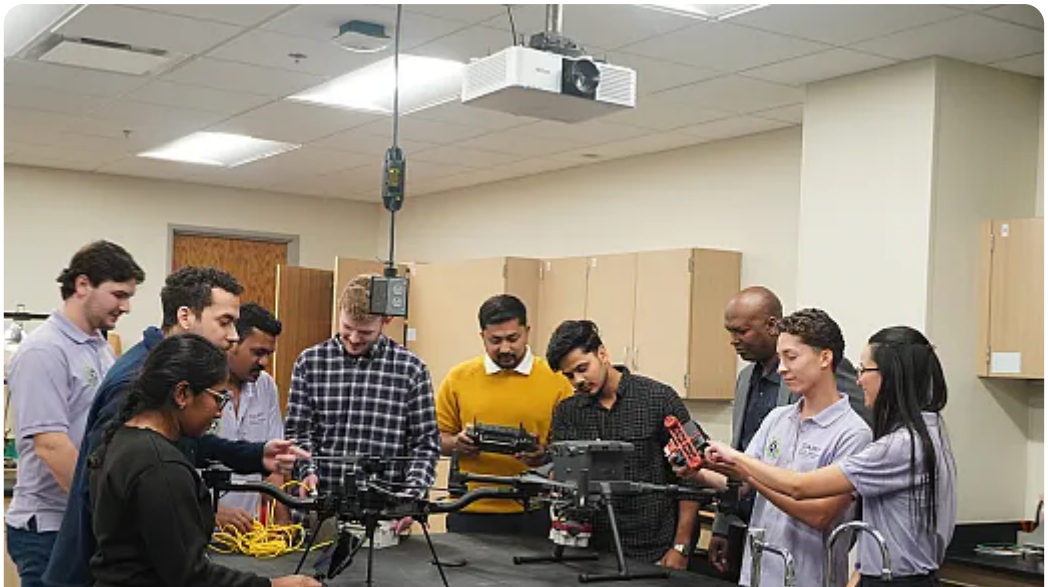


Paul Scott

But hunger is just as much of a scientific issue as it is a humanitarian issue. Scientific innovation is constantly trying to minimize the effects of some of these contributors. To address the climate-specific effects on food security, and to develop novel techniques and tools that enhance agricultural production, ASA, CSSA, and SSSA published a cross-disciplinary virtual issue titled "Enhancing Food Security through Innovative Agricultural Management." All of the Societies' journals were invited to participate in this virtual issue, which was spearheaded by Guest Editor Dr. Paul Scott, research geneticist and former editor of *Crop Science.*

The idea was to publish a variety of high quality reviews and original studies, capturing the scope of current research in agriculture. Topic areas were Genetics and Management, New Technologies, and Food Quality and Sustainability. Articles directly respond to the threats of climate change by developing drought-tolerant crops, optimizing fertilizer application rates, and restoring soil biodiversity, among other actions.

Scientists, humanitarians, and agricultural specialists know that fighting food insecurity isn't "easy," but increasing resilience in our crop systems and investing in restoration can slowly change food systems for the better. "Enhancing Food Security through Innovative Agricultural Management"—an effort three years in the making—is available to read now, featuring many open-access papers and full-access content available to Society members.



Gaurav Jha (in the yellow shirt), an author featured in the virtual issue, leads a team of researchers that use new technologies to advance the field of precision agriculture. You can read his paper on using satellite data to evaluate soybean yield here.

Check out the virtual issue

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