

# Breakthroughs in crop breeding that boost food security likely in next 20 years, says global seed sector

*Improved seeds and greater acceptance of crop biotechnology are on the horizon, according to a survey of more than 200 seed sector insiders.*

NYON, SWITZERLAND, September 19, 2024 /EINPresswire.com/ -- New plant breeding

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*Michael Keller, Secretary  
General of ISF*

breakthroughs to accelerate the development of improved crop seeds are likely in the next 10 to 20 years, according to a [survey](#) of the global seed sector.

More than 90 per cent of seed sector insiders surveyed expected innovations that breed more resilient and productive varieties of key crops within two decades. Such developments would bolster global food security in the face of the growing impacts of climate change, which was cited as the greatest challenge facing the sector by almost 45 per cent of respondents.

The survey, commissioned by the International Seed

Federation (ISF), gathered the insights of more than 200 seed experts from across seven regions on the sector’s achievements over the last century, as well as threats and opportunities in the future. It comes ahead of the United Nations General Assembly (UNGA 79), the UN Summit of the Future and the 2024 United Nations Climate Change Conference (COP29), where decision-makers will shape the climate and development agenda for the coming years.

“Seeds are the starting point of global food security and one of the most important inputs for farmers, determining their harvests, incomes and prospects,” said Michael Keller, Secretary General of ISF, which celebrates its centenary this year.

“Plant breeders have made enormous progress in developing new crop varieties with higher yields over the past century. As a sector, we are optimistic that with the right regulatory framework and strong partnerships, we can deliver the innovations needed to overcome the challenges of the next decades as well as the next century.”

Seed sector innovation is already credited with sparing [millions from famine](#) since the 1960s thanks to the development of semi-dwarf varieties of rice and wheat, which are less susceptible to lodging, or bending and breaking in the wind.

Around a third of survey participants cited this so-called Green Revolution as the seed sector's greatest contribution to humanity, with a further 30 per cent highlighting research and development as its crowning achievement. More than 60 per cent expect crops developed using biotechnology to be mainstreamed in low-income countries in the next 20 years.

However, advances in seed innovation and technology also come with challenges, including the ongoing need for investment and effective regulations. Almost 75 per cent of participants warned that regulations that are not science-based or are inconsistent posed a threat to the seed sector's ability to support global food security. More than half believed that global harmonization of regulations was likely over the next two decades.

Around a third of those surveyed said the most significant development in the seed sector over the past 100 years was the 1991 Convention of the International Union for the Protection of New Varieties of Plants (UPOV), which established a strong international framework for intellectual property protection for new plant varieties. Plant breeders' rights under UPOV have driven an increase in plant breeding among member countries and global competition. For example, in Vietnam, UPOV membership since 2006 has resulted in [more IP applications](#), more crop varieties and higher yields of rice, maize and sweet potato for 10 years after joining.

"The seed sector plays a fundamental role in feeding a growing population but it is essential that global regulations and frameworks reflect the reality of a truly global sector," said Arthur Santosh Attavar, President of ISF and Chairman and Managing Director of Indo-American Hybrid Seeds.

"Plant breeders need adequate protections to incentivize innovation that is balanced against shared access for breeding new varieties. Harmonised, consistent policies can ensure every country has access to the latest seed innovations."

Among the calls to action made by survey participants included:

- "Prioritize sustainable and resilient agricultural practices that address the challenges of climate change, biodiversity loss, and global food security."
- "Harmonize regulations for the movement of seeds."
- "Seed technology transfer to less developed countries to ensure food security."

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