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“Towards shifting paradigms in agriculture  
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## Enabling Farmers to Exploit Genetic Gains for Sustainable Crop Production Systems

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### Abstract

Global efforts to accomplish the onerous task of a 50 percent increase, over the 2012 figures, in the production of food and other agricultural products sustainably by 2050 are confounded by the impacts of climate change and other drivers. To underscore the enormity of the constraints to attaining universal food security and nutrition by 2030, a commitment of the Sustainable Development Goals, one in every 10 persons globally or one out of every five persons in sub-Saharan Africa did not have enough nutritious food to eat in 2019. Still more worrisome, the number of the food insecure and malnourished has been increasing steadily over the last six years. With 80 % of our food being plant-based, a significant component of the solutions to these untenable conditions must be sourced from crop production systems – which produce more with fewer inputs. Towards this end, the case is made that farmers’ access to the quality seeds and planting materials of the well-adapted, productive and nutritious crop varieties which are resistant to myriad biotic and abiotic stressors must be enhanced. This requires the safeguarding of the widest spectrum of plant genetic resources for food and agriculture, the use of their inherent variations in breeding progressively superior crop varieties and the agency of responsive seed systems that cater especially to resource-poor farmers of food security crops in vulnerable parts of the world. The normative and operational work of the Food and Agriculture Organisation of the United Nations and its partners in this regard is reviewed and future perspectives shared.

**Keywords:** Plant genetic resources