Gene editing is a key climate adaptation tool to ensure the health of people and the planet

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Abstract

Agriculture is widely acknowledged as a major contributor to climate change and other associated environmental calamities. It is responsible for at least one quarter of all greenhouse gas emissions and uses half the planet's habitable land. It is a major driver of topsoil loss and deforestation, leading to diminishing biodiversity. What's more, one third of the food produced is lost or wasted, further contributing to agriculture's negative environmental footprint. Simultaneously, our rapidly changing climate poses new threats to our food and agriculture production systems, creating a cyclical conundrum. Clearly, a more sustainable food system that mitigates the impacts of climate change while positively contributing to the United Nation's Sustainable Development Goals is required.

With many climate targets already off-track, significant investments in climate adaptation strategies are critical. New breeding technologies, such as gene editing, will be key in building a climate-resilient agricultural system. Gene editing can facilitate the relatively rapid development of new climate-adapted, nutritious crop varieties that will improve our food system. In this talk, I'll share examples of gene editing applications that hold promise for improving the health of people and the planet.

Key words: CRISPR, gene editing, sustainability, agriculture, nutrition