

Here's how we can overhaul our food and farming systems to grow enough food to meet population and climate change challenges

As consumers, our relationship with food – how we grow, produce and eat it, must change in response to increased demand and warming conditions. But how can this be achieved?

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Vertical farming involves growing crops like [tomatoes, mushrooms and strawberries](#) in stacked layers, [typically in factory-style situations, often without soil and sunlight](#).

Such farms utilize low-value land that might not otherwise be used for food production, and have even been adopted outside of [Earth's atmosphere](#).

...

To ensure future food security, farmers must also ensure their crops are robust enough to survive under changing conditions. Biotechnological solutions – [those using biological systems, living organisms or parts of them to develop different products](#) – could be key.

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Mechanization of automated manual labor with machines like tractors and combine harvesters has made industrial farming on large scales possible. A second revolution, which implements agricultural technology and introduces innovative and sustainable practices, can further improve the efficiency and yield of crops and reshape our food systems for the better.

And it starts with seeds; the human eye currently evaluates seedlings, but robots equipped with machine vision and [artificial intelligence \(AI\) could be taught to recognize desirable traits](#) to aid plant breeding, speeding up or even ending the laborious process of sorting seedlings.

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