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Commentary

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Future of agriculture

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DESCRIPTION

Agriculture cannot survive using traditional methods alone and requires large-scale technological interventions

With world population growth of more than 1% per year, meeting the food needs of all of these people will be a challenge in the coming years. One way to meet this challenge is to introduce the latest technologies in agriculture.

The two main drivers of food demand, population and income, are increasing. The world population is expected to reach 9.1 billion people in 2050, up from 7.4 billion in 2016. According to a report by Food and agricultural organization, farmers around the world must increase food production by 70 % compared to 2007, to meet the needs of the general population. Another reason for the demand for food is raising with world income levels, especially in developing countries. As a result, these countries will be able to add more protein to their diets. Methods to survive Agriculture in future are as follows.

Robotic solutions

Farm consolidation will increase the need for outside labor. Expect high-tech solutions like robotics to come to the rescue. 4,444 dairy farmers are already using milking robots to replace workers. And farm machinery manufacturers are testing prototypes of robotic tractors and sprayers to do field work without human drivers.

The leap from prototype to commercial robotic machine operation may be brief. Today, many new machines are equipped with electronics to control operations with very little human interaction. However, legal and regulatory issues related to robots must be resolved first.

Satellite farming

Precision agriculture (AP) or satellite agriculture is a concept of agricultural management that is based on the observation, measurement and response to the inter and intra-branch variability of plants. Precision farming was made possible by the advent of GPS and GNSS. Allows real-time mapping of fields and arable land. The Israel-based company Tevatronic, for example, has developed an irrigation controller for precision irrigation that reacts in real time to the actual needs of plants while taking into account the experiences of farmers. It solves two problems, namely, over or under watering, both of which cause a loss of yield and income. The system is already commercial and is sold to customers in Israel, the US, Sri Lanka, Thailand, Australia and India.

Gene edited crops

This new technology allows scientists to precisely manipulate genes in DNA in order to create a better variety of plants. In the future, gene editing should allow farmers to select certain plant varieties that have properties such as resistance to various diseases, tolerance to drought, or more desirable oil content. Gene editing will allow a wider variety of crops to be grown by removing traits that hamper widespread production.

Plant crop management

Water availability, environmental impacts and soil health will continue to pose challenges for farmers in the future. But new technologies will help them solve these problems more efficiently.

Soil health measurement technology, as well as

satellite and aerial imagery to monitor plant growth, are becoming common. Anticipating for the widespread adoption of precision technology that extends to the factory level. Another Syngenta employee, Blue River Technology, has developed a precise smart device that does just that. The device, known as the Lettuce Bot, uses cameras, processors, computers and quarter-inch sprayers to thin the lettuce crops in the fields. This type of technology translates into less chemical consumption and less environmental impact, which will be very important in 2050.

CONCLUSION

The COVID-19 pandemic has given a push to automation and the agro-tech sector. Experts are of the view that the pandemic has helped in escalating the adoption of generation at some point of the farming ecosystem. Agriculture cannot live to tell the tale totally on conventional techniques and wishes large-scale generation interventions. Emphasis have to take delivery of on innovation, data-sharing, infrastructure, and permit end-time facts get right of entry to farmers. Since one of the predominant everyday duties of each farmer is to determine while and what kind of to irrigate. The efforts are being accomplished to transform agro-tech demanding situations into opportunities.