

*Commentary*

## Agriculture technology usage

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### DESCRIPTION

The word “agricultural technology” refers to machinery and other equipment designed for a practical and new application in agriculture, natural resources, and food research and development. Fertilisers, herbicides, seed technology, and other agricultural technologies are all influenced by agricultural technology. Biotechnology and genetic engineering have resulted in pest resistance and increased agricultural production. Mechanization has led in more efficient tilling and harvesting, as well as less physical labour. Agricultural technologies are being developed in order to boost productivity while also resolving chemophysical, biological, and socioeconomic restrictions in crop production systems. Farmers are no longer required to apply water, fertiliser, and pesticides in a regular manner over whole fields. Instead, they may utilise the bare minimum of chemicals to target extremely precise locations, or even treat individual plants individually.

### Legality

The Federal Aviation Administration (FAA) encouraged farmers to employ drones to monitor their farms when they became available. However, due to the unexpected proliferation of agricultural drones, the FAA quickly withdrew such assistance, pending the establishment of new standards and rules. Following occurrences such as drones colliding with crop dusters, the FAA and the AFBF (American Farm Bureau Federation) initiated talks to develop laws that would allow the beneficial use of such drones in a safe and efficient manner. The FAA established guidelines for commercial drone operations in 2016. Under these guidelines, commercial drone operators must pass a knowledge exam, register their aircraft, and fly within the listed constraints. While mostly satisfied with the recommendations, the American Farm Bureau Federation

would prefer minor changes to some of the restrictions that have been imposed.

### Seeding from the air

Airborne seeding is a method of seeding that involves spraying seeds from an aerial mechanical device such as a drone, aircraft, or helicopter. Aerial reforestation is used when the purpose is replanting. Aerial seeding is a method of seeding that is disseminated through the air. It is frequently used to spread various grasses and legumes to large areas of land that require vegetation cover after a fire. Wide flames may annihilate large regions of plant life, posing erosion risks. Aerial seeding can decrease erosion concerns and limit the growth of invasive plant species rapidly and efficiently. Aerial seeding is an alternative to traditional seeding methods when the terrain is extremely difficult, at great altitudes, or otherwise inaccessible. Direct distribution causes problems with germination, pests, and seedlings. A more successful planting approach aims to avoid rodent or other wild animal predation. transplant seedlings from a plant nursery to the field. Aerial planting has a low yield and takes 25% to 50% more seeds to provide the same results than drilled sowing.

### Agricultural robot

An agricultural robot is a machine used in agriculture. Today, the major area of use for agricultural robots is harvesting. Weed control, cloud seeding, seed planting, harvesting, environmental monitoring, and soil analysis are some of the emerging applications of robots or drones in agriculture. The agricultural robotics market is anticipated to reach \$11.58 billion by 2025, according to Verified Market Research.

Fruit picking robots, autonomous tractor/sprayers, and sheep shearing robots are all intended to take the place of human work. Before beginning a work, several things must be addressed (for example, the size and colour of the fruit to be

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removing). Other horticultural duties that robots can perform include trimming, weeding, spraying, and monitoring.

### **Agriculture mechanisation**

Mechanised agriculture is the process of deploying agricultural machinery to mechanise agricultural operations, hence improving farm worker productivity significantly. Many farm operations that were once performed by manual labour or working animals such as oxen, horses, and mules have been supplanted by powered technology in contemporary times. Many instances of the employment of tools, such as the hoe and plough, can be found throughout agricultural history. However, the continued integration of technology since the Industrial Revolution has allowed farming to become significantly less labor-intensive. Mechanisation was a major contributor to urbanisation and industrial economies.

Mechanisation, in addition to enhancing production efficiency, fosters large-scale production and, in some cases, can increase farm produce quality. On the other side, technology has the potential to displace unskilled agricultural labour and create environmental deterioration (such as pollution, deforestation, and soil erosion), particularly if used in a piecemeal rather than comprehensive manner. The mechanical structures and gadgets used in farming or other agriculture are referred to as agricultural machinery. There are many different varieties of such equipment, ranging from hand tools and power tools to tractors and the numerous farm implements that they tow or control. Both organic and nonorganic farming require a wide range of equipment. Agricultural technology has become an integral aspect of how the world gets fed, particularly with the emergence of mechanised agriculture.