

## **What is digital agriculture?**

Digital agriculture is the integration of digital technology into livestock and crop management and other processes related to cultivating and managing food resources. OR

Digital agriculture refers to the use of advanced technology and data-driven solutions to optimize various aspects of agriculture.

## **Some of the application areas of digital technology in agriculture include:**

1. IoT and Sensors.
2. Artificial Intelligence.
3. Drones.
4. GPS mapping.
5. Soil data management.

### **◆ IoT (internet of things):**

Refer to the online network of device which communicates with the other device to data transformation.

### **◆ IoT use cases in agriculture are:**

- Monitoring of climate conditions.
- Greenhouse automation.
- Crop management.
- Precision farming.

### **◆ Artificial Intelligence:**

Artificial intelligence is a machine's ability to perform the cognitive functions we usually associate with human minds.

◆ **Using drone in agriculture:**

1. Land imaging.
2. Surveying topography and boundaries.
3. Soil monitoring.
4. Livestock movement and counting.
5. Irrigation monitoring.
6. Spraying needs.
7. Collecting soil and water samples

◆ **GPS mapping:**

Is the process of using GPS technology to map out your land. It is used by farmers and agribusinesses as a way to gather information about their fields and crops, such as how much they have grown or how fertile they are.

◆ **Data management system**

DBMS: is a collection of programs which enable its user to access database, manipulate data.

**Components of a Soil Data Management:**

1. **Data Collection:** Gathering soil samples, measuring properties.
2. **Data Storage:** Secure and organized databases.
3. **Data Analysis:** Tools for processing and interpreting data.
4. **Data Visualization:** Graphs, maps, and reports for easy understanding.

◆ **Soil information system:**

The Soil Information System is a centralized information system that consolidates all data, starting from the survey, soil sample, testing and analysis to final output generation for soil mapping and recommendation.

**Online data storage System:**

- ❖ Google Drive
- ❖ Microsoft One Drive
- ❖ I Drive
- ❖ Apple I Cloud Drive
- ❖ Drop box
- ❖ Proton Drive

Benefits of digital agriculture:

1. Precision farming
2. Increase agriculture productivity.
3. Prevent soil degradation.
4. Reduce chemical application in crop production.
5. Save time and money.