What is GIS?

Geographic Information System (GIS) is a computer system capable of assembling, storing, manipulating and displaying geographically referenced information in order to make informed decisions.

What are Components of GIS?

1. Hardware
2. Software
3. Data
4. User
5. Method

Three Strategic Uses for GIS in Agriculture

1. Strategic Planning

For example, depending on the size of their farm and presence of factors that are important to the type of farm, a farmer might view and analyse GIS maps of soil properties, average rainfall, elevation, and more, all in one map. Using these detailed maps, they can plan the most efficient and cost-effective way to use their land

2. Water Management

Another important use for GIS in agriculture is water management. Using GIS, the farmer can determine where rain water is draining too quickly or too slowly so that either engineering steps can be taken to reroute its flow, or chemicals can be applied to improve the internal drainage of the soil. In areas where the water flows too quickly, the result can be crop loss and soil erosion. In areas where water flows too slowly, crop growth could be hampered, sometimes referred to as plants having 'wet feet'.

3. Crop Suitability Mapping

Soil characteristic maps can help with crop planning. A map of soil themes such as salinity, internal drainage, pH and various aspect of soil chemistry that are important to the crop, a farmer is planning on planting, can provide an important information backdrop for understanding whether or not a crop will grow successfully in an area.

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The various types of mapping provided by GIS to be useful for agriculture

1. Soil type mapping
2. Crop coverage mapping
3. Rivers/distribution mapping
4. Land use mapping
5. Irrigation system mapping
6. Meteorological mapping

Benefits of GIS in Agriculture:

1. Cost savings resulting from greater efficiency.
2. Better decision making
3. Crop rotation
4. Site Selection for Agricultural Projects