Introduction to GIS and Integration of UAV Map Products

Training on Mapping with Drones

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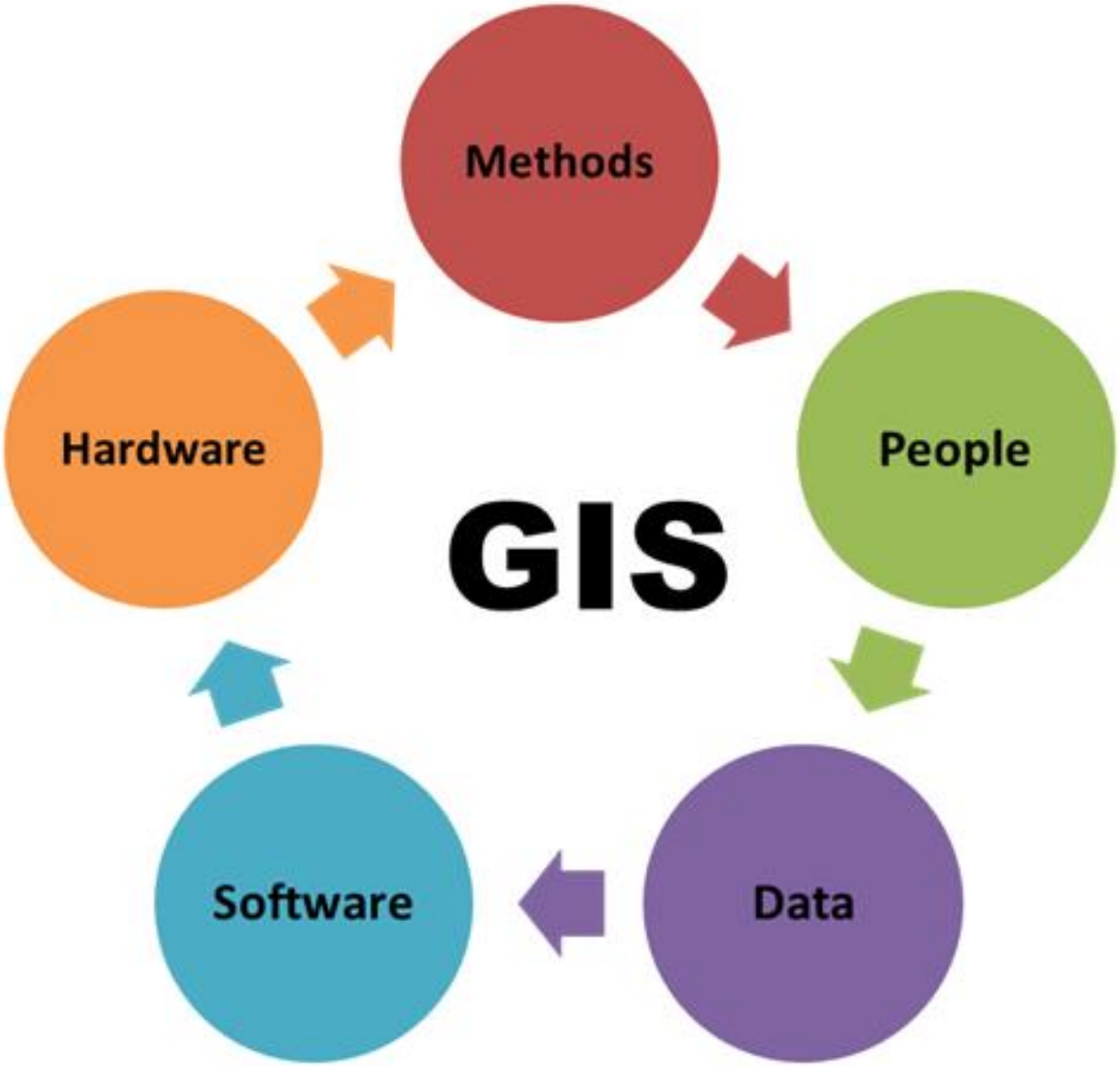
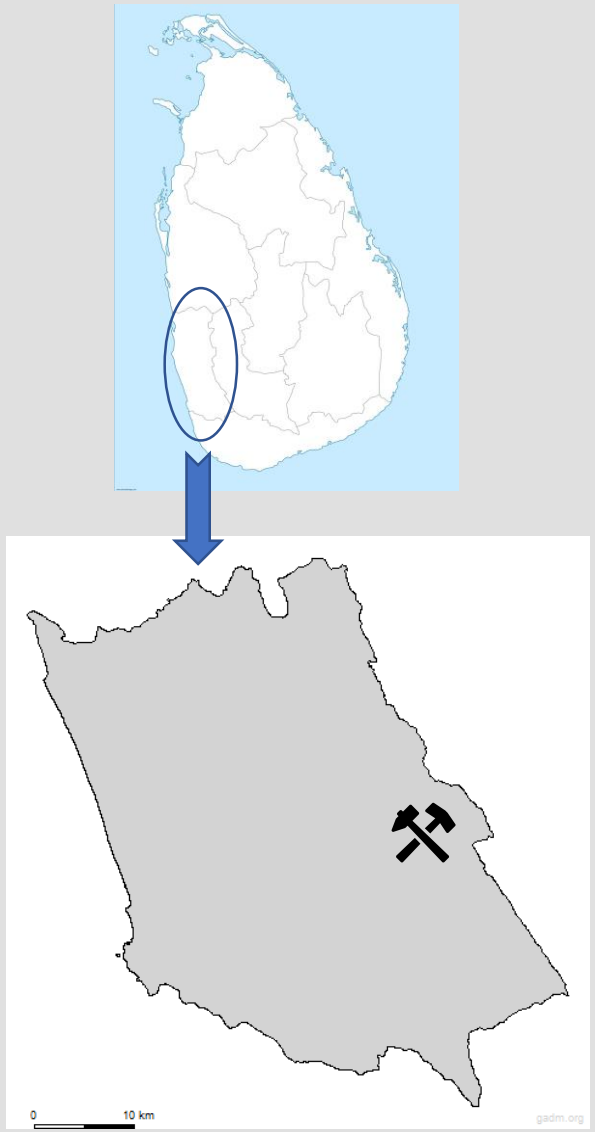
What is GIS?

A Geographic Information System (GIS) is a computer system that analyzes and displays geographically referenced information. It uses data that is attached to a unique location.(USGS)


Methods
People
Data
Software
Hardware
GIS

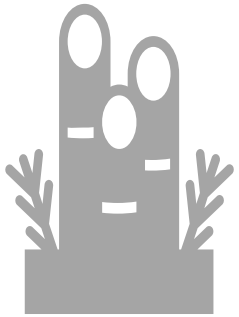
Why we need GIS



Q: Imagine you want to establish a metal crusher to produce crushed metal aggregates for civil constructions. What are the factors you would consider in selecting a suitable location?

Answer:

Available road network from the quarry to the crusher plant.

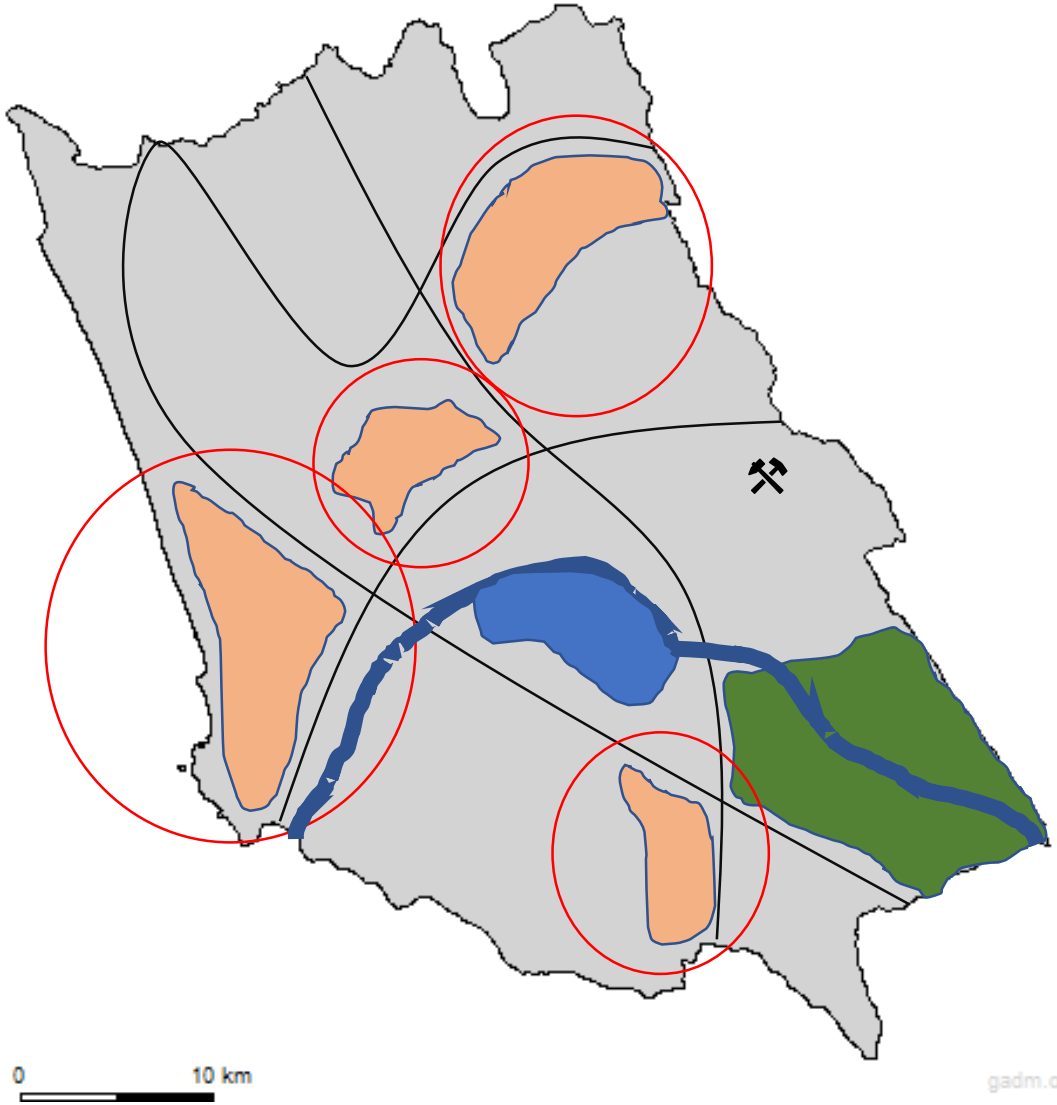


Consideration about settlements nearby and potential nuisance to them by the crusher plant.

Availability of streams, ponds and forests and wild life that could be impacted by the crusher plant.

Location of the storage facilities and distribution centers.

Government laws and regulations.



Roads

Stream

Human settlements

Reservoir

Forest

Government regulation for buffer zone

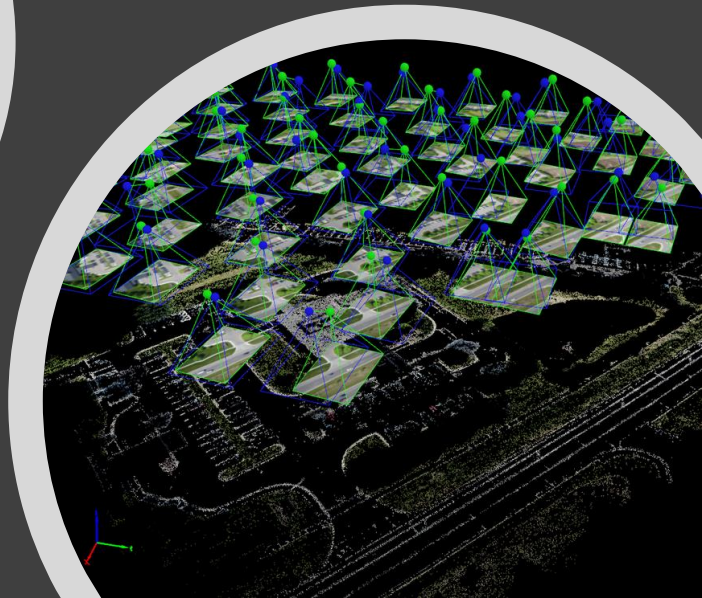
GIS is a tool which helps in decision making

What you have learnt so far:

- Drone data acquisition
- Photogrammetry
- GNSS for ground control
- Map products

How does each of the components relate to GIS?

- Drone data acquisition is a good source of DATA for creating a GIS

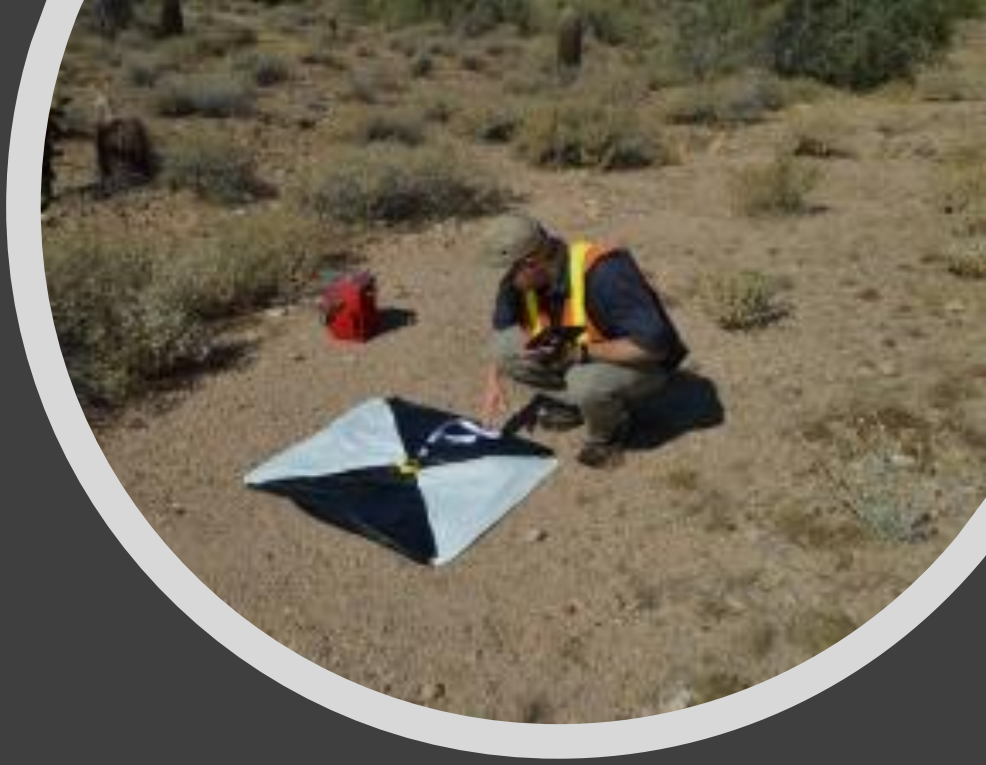


How does each of the components relate to GIS?

- Photogrammetry creates 3d models, and DEMS which are useful for GIS analysis

How does each of the components relate to GIS?

- GIS always involves location information and GNSS receivers provide this.



How does each of the components relate to GIS?

- Map products from drones provide high resolution data for GIS analysis work.