



Section: Data Sources

Module :Spatial Data



GIS data in Context

“Spatial data identifies the geographic location of features and boundaries on Earth, such as natural or constructed features, oceans, and more. Spatial data is usually stored as coordinates and topology and is data that can be mapped. GIS data is divided into raster and vector data.”

In this module, we look at the various sources of GIS data that can be used in GIS software.

South Africa

The list below shows open source data source available in South Africa.

1. [NGI](#) – Custodian of 1:50 K,1:250 K vector and raster data sources. NGI also provides raster data sources namely DEM of various resolution.
2. [Surveyor General](#) – provides map of all land parcels and administrative boundaries in South Africa. It shows the relationship of every piece of land to those adjoining it. In addition other surveyed real rights such as servitudes and leases are also included in this map.
3. [Demarcation Board](#) – provides all administrative data for South Africa
4. Government Departments – Most government departments have website that provides access to data in the specific domains they specialise in eg [Water Affairs](#)
5. Municipalities – Various municipalities in South Africa provides online portals where users can download data. Eg [Cape Town](#)



Global Data sources

- 1) [Natural earth](#) -is a public domain map dataset available at 1:10m, 1:50m, and 1:110 million scales. Featuring tightly integrated vector and raster data.
- 2) [OSM](#) – Open street map is a collaborative project where users capture data and upload it. There are tools in openstreet map to clean the data.
- 3) [Landsat](#) – provides remote sensing data.
- 4) [Open Topography](#) - provides a portal to high spatial resolution topographic data and tools
- 5) [Esri Open Data](#)
- 6) [USGS Earth Explorer](#) – provides remote sensing data.
- 7) [NASA's Socioeconomic Data and Applications Center \(SEDAC\)](#) – provides data that deals with human interactions with the environment.

Web Services

This list provides data sources that can be used as web services (WMS,WCS,WFS) in a GIS.



More about



Spatial data can either be vector or raster. Each type of spatial data can further be differentiated by the format in which the data it provides. Each GIS software has the ability to read and write different data source type. The most common vector formats are shapefiles (.shp), kml, gml and geojson. For raster data, the most common types are geotiff, ascii and other proprietary formats like ecw and mrsid. Most GIS software can also read and write none spatial data in excel formats, csv and this can be combined with spatial data to produce meaningful information.

The data sources provided above are not exhaustive and users should try to search the web for other additional data sources but this provides a starting point when looking for open source data.



Check your knowledge:

1. What is the difference between spatial and non spatial data:

- a) Non spatial data cannot be loaded in a GIS whilst spatial data can be used in a GIS.
- b) Spatial data is vector data that has location.
- c) Spatial data is vector or raster data that has location.

2. Which statement is true regarding open source data:

- a) The quality is generally poor and you have to spend more time cleaning it.
- b) There is not quality assurance and the metadata is generally non existent.
- c) There are no cost associated with downloading the data.

3. Can an excel spreadsheet store spatial data:

- True
- False

Answers: 1c, 2c, 3t



Further reading:

https://en.wikipedia.org/wiki/Open_data