



Empowering Agriculture

with

Precision Terrain Data

Enhance Crop Yields

Manage Resources Efficiently

Ensure Sustainable Farming

With our detailed elevation models, exact hydrological data, and thorough soil classifications, you can optimise your farm for maximum productivity and the greatest environmental stewardship. From irrigation planning to soil capability assessments, our solutions enable the best data-driven decision-making in South Africa.

Why Choose **GeoSmart**



Precision

We provide 50cm vertical interval contour data and high-resolution terrain models.



Customisation

You can get tailored datasets adapted to your specific agricultural wants and needs.



Sustainability

We offer informative insights that promote the use of sustainable farming practices.



Scalability

Whether you run a small farm or a large enterprise, our solutions grow with you.

Our Core **Services**

Contour Data with a 50cm Vertical Interval

Our high-resolution contour data, with 50cm vertical interval spacing, covers any location across South Africa. It enables accurate modeling of farm topography, essential to effective irrigation, soil erosion control, and field planning.

Soil and Land Capability Assessments

Our soil and land capability data helps you understand the suitability of your soil for various crops. This includes soil fertility assessments, moisture retention capabilities, and classifications for optimal land use.

Stream Network and Catchment Analysis

An essential analysis for water resource management on agricultural lands! Our data includes detailed maps of natural drainage paths and catchment areas, enabling you to harness natural water flow in an efficient way.

Topographic Wetness Index

The TWI provides insights into areas of potential water accumulation. By understanding where moisture naturally collects, you can make informed decisions about crop placement and the relevant drainage needs.



Applications and **Benefits**

Optimising Crop Yield

By leveraging our high-resolution terrain data, you can optimize crop placement based on elevation, soil type, and moisture levels. This results in healthier crops, reduced input costs, and higher overall yield. Our soil capability data provides a detailed understanding of which crops are best suited for each part of your farm.



Erosion Control and Drainage Management

The erosion and slope data we provide helps you implement effective soil conservation measures, preventing nutrient loss and maintain land productivity. Our contour and catchment data ensure that natural water flow is effectively managed, reducing erosion risk and improving soil stability.

Sustainable Water Resource Management

Our hydrological data, including stream network and catchment analysis, ensures that water usage is optimised. This supports irrigation planning and helps to identify potential water storage locations.

Tailored Irrigation Planning

Using our detailed contour and wetness data, you can develop precision irrigation systems that align with natural water flow and elevation changes. This will promote even crop growth.



Real-World **Scenarios**

Vineyard Irrigation Optimisation

Challenge	High water usage and soil erosion due to a sloped landscape.
Solution	High-resolution contour data can enable design of a drip irrigation system in line with the natural slope.
Result	The vineyard will show reduced water consumption, see healthier vine growth, and reduced erosion.

Soil Capability-Based Crop Selection

Challenge	High fertiliser costs and inconsistent yields.
Solution	Soil capability data can enable the identification of soil types suited to specific crops.
Result	The farm will show a significant increase in yield and a reduction in fertiliser usage.

Data Access and **Integration**

Real-time access to terrain and soil data makes decision-making faster and more efficient. This is why our data can be accessed through a simple **API**. It allows farms and other agricultural businesses to integrate high-quality geospatial data directly into their planning software.

Our API portal offers an straightforward **web application** to explore and extract the data you need. This tool provides quick insights without complex integration, making it ideal for smaller farms or consultants.

All our data is available in multiple formats compatible with GIS and engineering software, including CAD, ensuring **seamless compatibility** with existing agricultural planning tools.

Visit our website for more information or go to our **Portal** to gain access to our latest products: api.geosmart.co.za/datahub/GeoPortal/

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