High-resolution soil moisture data

We monitor soil moisture in more than 40 countries every day

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Lobelia's soil moisture is a satellite-based product offering historical and up-to-date soil moisture data globally at high spatial and temporal resolution. Information is provided for the first 5 cm from the surface.

The product is validated in several extremely dry locations across the globe, offering superior performance in semi-arid to arid regions.

USED FOR:

-Water management and drought risk.

-Wildfire prediction.

-Reforestation monitoring.

-Plague prevention.

-Crop yield insurance.

FEATURES:

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⌖	Either 30 m or 1 km Resolution - Global
☀	Weather, light and RFI independent
⸜	Historical data and monitoring
🛰	Immediate data retrieval without the need of local calibration
📑	Based on a peer-reviewed methodology
>_	API, FTP, Web application

How does it work?

1. Lobelia's downscaled product is driven by vegetation index and land surface temperature data and a lower resolution soil moisture background signal.

2. The model has been validated in many locations across the globe and benchmarked as a very accurate solution, particularly for dry areas.

3. The historical data availability makes it possible to calculate soil moisture anomalies and monitor drought and flood risk.

4. The product provides additional insights for agriculture and food systems, such as field capacity or wilting point.

5. The service is provided for exact locations or large areas, through a dashboard and endpoint API.

Large-scale soil moisture index with a global spatial coverage, including long historical data records.

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Lobelia's product captures trends in watersheds, large-scale agricultural fields and assets. Its accuracy is clearly visible in its sensitivity to basins, rivers and irrigation districts in dry regions, not correctly represented by existing available products.

The soil moisture product highly correlates with precipitations demonstrating superior quality and accuracy.
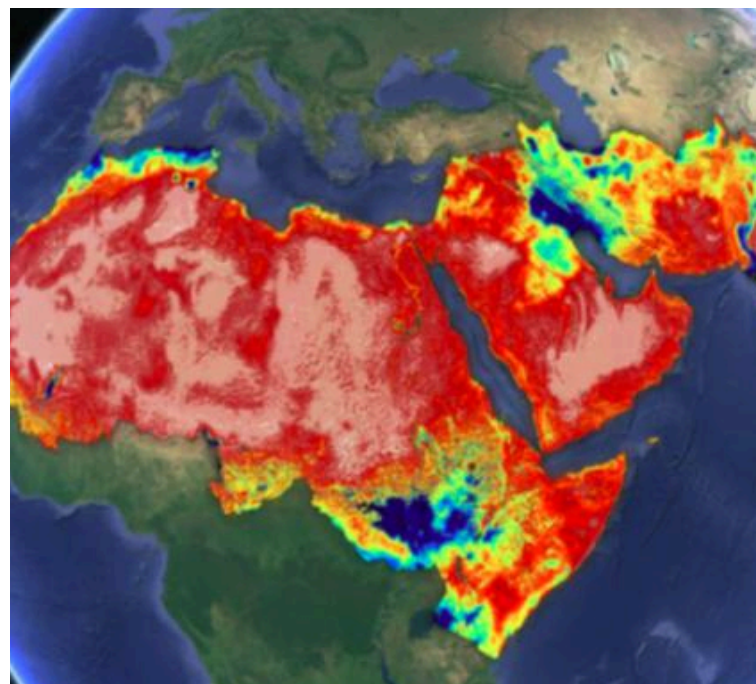
USED BY:

	1 km product	30 m product
Time coverage	2016 to present	2016 to present
Spatial coverage	Global	Global
Sensing depth	~ 5 cm from surface	~ 5 cm from surface
Temporal resolution	150-200 observations/year	35-90 observations/year
Spatial resolution	1km	30m
Satellites used	SMAP/SMOS, MODIS	SMAP/SMOS, Landsat
API response latency	5 minutes	5 minutes

DEVELOPED BY LOBELIA IN COLLABORATION WITH ISARDSAT

This product has been developed by Lobelia in collaboration with isardSAT, a recognized expert in satellite missions and processing algorithms. isardSAT developed the dispatch algorithm at the base of the product. The methodology has been validated in several peer-reviewed publications.

RELEVANT PEER-REVIEWED PUBLICATIONS:

Gomis-Cebolla et al. (2022) DOI: 10.1016/j.jhydrol.2022.127569
Paolini et al. (2022) DOI: 10.3390/rs14010167
Escorihuela et al. (2018) DOI: 10.1016/j.rsase.2018.06.002
Escorihuela & Quintana-Seguí (20216) DOI: 10.1016/j.rse.2016.02.046
Merlin et al. (2013) DOI: 10.1016/j.rse.2012.11.008

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