DINOSAR

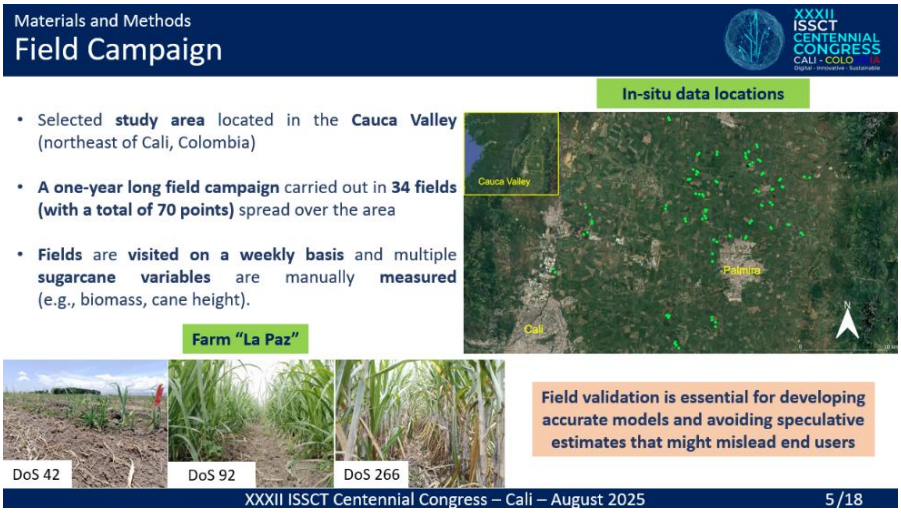
Diagnostic tool that integrates optical, infrared and SAR data

PRESS RELEASE
For immediate release
Amersfoort, 03 December 2025

DINOSAR is a three-year EU-funded project under the European Union Agency for the Space Programme (EUSPA), aiming to develop advanced algorithms that integrate Copernicus optical, infrared, and SAR data to provide smart agricultural monitoring services, even in regions affected by frequent cloud cover. With the Earth Observation based services, DINOSAR will support farmers to match agricultural inputs (fertilisers, pesticides, water) to what the crop needs, decreasing their environmental footprint. To develop this technology, DINOSAR focuses on one specific case-study: sugarcane crops in Colombia.

SAR–Optical Integration for Reliable Crop Monitoring

A new method is now being developed under the DINOSAR project, to improve sugarcane biomass estimation by combining satellite data with crop growth modeling. The DINOSAR project integrates Sentinel-1 radar data and Sentinel-2 optical imagery to capture both structural and physiological crop information. These observations are supported by a one-year field campaign in the Cauca Valley, collecting detailed biophysical measurements. The modeling framework uses a state-space approach with an evolution model of the crop and numerical models relating the satellite observations (optical and radar) with biomass estimates, and a Kalman filter to merge predictions. Different configurations (SAR-only, optical-only, or combined) are being tested. Results show that integrating both data sources significantly improves biomass estimation accuracy. Future work will incorporate physically-based models to enhance generalization and enable broader operational use.



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DINOSAR project showcased at International Society of Sugar Cane Technologists (ISSCT) Congress 2025 in Cali, Colombia

The DINOSAR consortium proudly participated in the 31st International Society of Sugar Cane Technologists Congress, held from 24–28 August 2025 in Cali, Colombia. The event marked a key milestone in the project's international outreach and engagement with global stakeholders in sugarcane and precision agriculture. This participation was particularly relevant, as the project's study area was located in the Cauca Valley near Cali, and the solutions developed by DINOSAR directly targeted the professionals attending the congress. The consortium was thus able to engage with potential end users, explain the algorithm and technology developed in greater detail, and demonstrate its practical application in the field.

Overall, this mission marked a significant milestone for DINOSAR, reinforcing its presence in the Cauca Valley, while strengthening ties with Colombian partners and expanding its international network.

Next steps

DINOSAR will continue developing and validating its algorithms, integrating feedback from the ISSCT and field partners, and preparing the **first operational demonstrations**, in Colombia, in 2026.

DINOSAR will be present at several key events in 2026, covering several areas:

- **Synthetic Aperture Radar (SAR) technology events**, with the European Conference on Synthetic Aperture Radar (EUSAR 2026), in Baden-Baden, Germany, in June 8-11.
- **Precision Agriculture events**, such as the Agrotech Colombia 2026, in Cali, Colombia, in July 1-2, the ConBAP2026**,** in Porto Alegre, Brazil, in July 13-16 or the ExpoAgrofuturo, in Bogotá, Colombia, in October 21-23 2026.
- **Group on Earth Observations (GEO) events**, where DINOSAR gains international visibility and shares its results. DINOSAR has participated in several forums and workshops over the past two years, read more information: https://www.dinosarproject.eu/category/news-and-events/news/

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