



PRECISION AGRICULTURE AND REMOTE SENSING



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR

Touching lives through innovation



Our precision agriculture group offers advanced earth observation capabilities that support decision-making across agriculture and environmental management.

Our unmanned aerial vehicle-based hyperspectral and light detection and ranging systems, combined with advanced cloud-driven satellite analytics, support the digitalisation of agriculture for precision management of crops and rangelands, sustainable land-use planning, and biodiversity assessment from local to regional scales.

PRECISION AGRICULTURE INFORMATION SYSTEM

Our Precision Agriculture Information System (PAIS) is a cloud-based digital platform that delivers essential weekly insights on soil and crop conditions using advanced satellite-derived data. It is designed to support farms of all sizes, from smallholder operations to large commercial enterprises.

PAIS helps de-risk agricultural activities for farmers, financial institutions and extension services. The PAIS interface is simple, farmer-friendly and accessible to emerging and experienced farmers.

It specifically addresses the following soil and crop parameters:

- **Soil properties:** Levels of organic matter, clay content, nitrogen, moisture and pH.
- **Crop health:** Canopy cover, chlorophyll levels and leaf moisture status.

PAIS enhances decision-making by enabling:

- **Early detection:** Spot potential issues like crop emergence challenges, weed infestations, nutrient deficiencies and disease outbreaks before they impact yield.
- **Potential crop yield:** Estimate potential crop yield up to one or two months ahead of harvest, empowering proactive farm management.

OFFERING TO INDUSTRY

The local agricultural sector is called upon to utilise this platform; it is accessible to both smallholders and large commercial farmers. Simply upload or digitise your farm boundaries into the system via the internet on your desktop and mobile platforms. PAIS will deliver tailored insights specific to your farm's needs. Whether you're aiming for precision agriculture or looking to boost productivity, PAIS is your partner in smart, data-driven farming.





WORK WITH US:

FOR MORE INFORMATION, PLEASE CONTACT:

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**LET'S COLLABORATE AND TOUCH LIVES
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