



Name of Solution:

Geospatial technologies to map Rice area, yield, and DSR suitable ecologies

Submitter: (International Rice Research Institute - IRRI)

Solution Overview: *What is it, and what problem does it solve? Brief 2–3 sentence description.*

Geospatial technologies enable mapping of rice area, yield, and suitability for DSR by integrating satellite imagery, remote sensing, and GIS-based analysis for precise, data-driven decisions. Geospatial technologies are used to map and analyse the rice-growing areas, assess yield potential, and determine the suitability of DSR cultivation. The approach aims to optimize rice production, improve resource management, and support sustainable agricultural practices.

Key Features & Benefits: *Main components and why it is useful? Bullet points summarizing methods, tools, and value added.*

- High-resolution mapping of rice-growing areas using satellite data.
- Yield estimation models developed through remote sensing and ground-truth data.
- DSR suitability mapping based on soil, climate, and irrigation data.
- Decision support systems for policymakers and farmers.
- Enhanced resource use efficiency by identifying spatial entry points for intervention.
- Data-driven prioritization of areas for scaling DSR and climate-smart agriculture.
- Supports climate resilience by identifying ecologies prone to abiotic stresses.

Where It Works and Where It Can Work: *Existing and potential target regions, agroecologies, or farming systems. Include examples if available*

- Currently implemented in South Asia, Africa, and Southeast Asia.
- Applicable across diverse agroecologies—irrigated, rainfed, and stress-prone regions.

- Potential for expansion to any other rice-producing geographies due to earth observation capabilities.

Evidence & Impact: *What results has it shown? Stats, pilot outcomes, or testimonials*

- Rice area and yield maps successfully developed and validated in multiple geographies.
- Used to identify impact zones of abiotic stresses (e.g., drought, cyclone) and inform response strategies.
- In Odisha, India, DSR suitability maps led to successful prioritization and trials of DSR technologies.
- Data products shared with state and central government agencies to support strategic agricultural planning.
- Contributed to improved targeting of interventions and increased adoption of sustainable rice practices.

Scalability & Adoption Support: *Why it can be scaled and what's needed to adopt it? Low-cost, adaptable, partner-ready, etc.*

- Low-cost and adaptable, using freely available or low-cost satellite data.
- Published in peer-reviewed journals, ensuring scientific credibility.
- Successfully adopted by partners such as TNAU and state-level agencies.
- Ready for scaling with support from donors, governments, and private sector partners.

Partners & Contact Info: *Who's involved and how to connect? List of key contact and partners + email / phone.*

Bihar Agriculture University, Jeevika, IFFCO Kisan Sanchar Limited, Click2cloud, JNKVV

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