

Green Revolution in the Paddy Fields: Central Thailand Launches Low-Carbon Rice Initiative

Ayutthaya Rice Research Centre targets a 50,000-rai pilot across eight provinces to lower emissions and capture the global carbon credit market.



Thailand's central plains are set to become the frontier for sustainable agriculture as the Phranakhon Si Ayutthaya Rice Research Centre aggressively deploys the Bio-Circular-Green (BCG) Economic Model to pioneer low-carbon rice production.

The state-backed initiative targets a massive 50,000-rai pilot area across eight central provinces, looking to tap into the lucrative international green agriculture market and secure a robust foothold in the burgeoning global carbon credit ecosystem.

Noppadol Prayoonsuk, director of the Phranakhon Si Ayutthaya Rice Research Centre, announced the strategic roadmap following a high-level consultative meeting held at the Na Hia Chai venue in Suphan Buri Province.

The summit gathered elite agricultural researchers from Ratchaburi, Chachoengsao, Pathum Thani, Prachin Buri, Lop Buri, Roi Et, Phatthalung, Pattani, and Nakhon Si Thammarat, alongside representatives from the National Rice Science Institute and the Rice Protection Research Group.

Technological deployment and resource efficiency

At the core of this eco-friendly agricultural drive is the scaling up of modern farming technologies. Funded by the Thailand Science Research and Innovation (TSRI) and the Agricultural Research Development Agency (ARDA), the project introduces a highly structured methodology to traditional paddy farming.

The campaign focuses heavily on three key interventions:

Alternate Wetting and Drying (AWD): An innovative water management technique that drastically curtails methane emissions.

Precision Fertilisation: Enhancing nutrient efficiency to minimize chemical waste and lower overhead costs.

Residue Management: Systematically processing agricultural waste materials to eliminate field burning.

"The central region of Thailand holds immense potential for developing a low-carbon rice production system," Noppadol stated. "The territory benefits from a comprehensive irrigation network, vast contiguous arable land, and a farming community that is uniquely prepared to adopt modern agritech solutions."

Capitalising on the green economy

The shift towards low-carbon cultivation is heavily driven by shifting international trade dynamics. As global market demand for environmentally certified agricultural goods rises steadily, Thailand's traditional rice sector faces an urgent need to innovate to retain its competitive edge.

"Low-carbon rice presents an extraordinary opportunity to generate premium market value," Noppadol explained. "By aligning our production with international climate change targets, we not only strengthen our brand in highly competitive export markets but also unlock a critical secondary revenue stream for our farmers through future carbon credit mechanisms."

The 2026 pilot scheme will blanket 50,000 rai spanning Phranakhon Si Ayutthaya, Ratchaburi, Chachoengsao, Pathum Thani, Prachin Buri, Suphan Buri, Lop Buri, and Bangkok.

Should the initial phase meet its strict sustainability and yield benchmarks, the research centre plans an aggressive commercial expansion to 280,000 rai by 2027, charting a definitive path toward a sustainable, low-carbon future for Thai agriculture.

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