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Rize and Temasek Life Sciences Laboratory expand 5-Year alliance to scale low-emission rice across Southeast Asia

25 May 2026 | News

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Southeast Asiaâ??s accelerating push toward climate-resilient agriculture received a major boost as Rize and Temasek Life Sciences Laboratory (TLL) announced the expansion of their collaboration through a renewed five-year strategic alliance focused on scaling low-emission rice production across the region.

What began in 2025 as a 93-hectare field validation programme in Central Java has now evolved into a large-scale commercialisation effort designed to establish verified, traceable and climate-smart rice supply chains capable of supporting both regional food security and global decarbonisation goals.

The partnership brings together Rizeâ??s expertise in large-scale farmer engagement, implementation and carbon measurement systems with TLLâ??s deep scientific capabilities in plant science, soil microbiome research and climate-resilient rice cultivation.

The renewed Memorandum of Understanding (MoU) marks a decisive transition from pilot-scale validation to commercial deployment, with the next phase targeting production of 50,000 tonnes of sustainably grown low-emission rice across Indonesia and Vietnam.

The collaboration builds on field trials launched in July 2025 in Central Java in partnership with Indonesiaâ??s Badan Perakitan dan Modernisasi Pertanian (BRMP), supported by the Philanthropy Asia Alliance and its member organisations. Conducted over two crop cycles, the programme evaluated water-management practices and nutrient optimisation systems designed to reduce greenhouse-gas emissions while preserving productivity and farmer profitability.

According to the organisations, the trials delivered measurable environmental and economic gains across participating farms.

Key outcomes included:

30â??35 per cent reduction in methane emissions compared with conventional cultivation practices

5 per cent increase in yields through optimised fertiliser management

5â??6 per cent increase in farmer net returns

Engagement of 173 smallholder farmers across trial sites

The programme also established field-level greenhouse-gas monitoring systems capable of generating high-integrity measurement, reporting and verification (MRV) data aligned with emerging carbon-market and sustainability standards.

The alliance comes at a time when rice cultivation is facing growing scrutiny within global climate discussions. Rice remains the staple food for more than half the worldâ??s population while contributing nearly 12 per cent of global methane emissions. Paddy cultivation also accounts for approximately 30 per cent of global freshwater consumption, placing the sector at the centre of future food-security and climate-resilience strategies.

Rize stated that one of the central objectives of the partnership is to ensure sustainability transitions do not come at the expense of smallholder livelihoods, positioning climate-smart agriculture as both an environmental and economic opportunity.

The expanded collaboration will focus on building commercially viable low-emission rice ecosystems capable of serving regional food markets while meeting the rising demand for traceable and lower-carbon agricultural commodities.

TLL will continue advancing agronomic protocols, climate-resilient rice varieties and soil-biome optimisation systems designed to reduce emissions and improve input efficiency. Rize will lead large-scale deployment, farmer onboarding and integration with commercial buyers and sustainability-linked supply chains.

The initiative also carries strategic implications for Singaporeâ??s long-term food-security ambitions. As the country intensifies efforts to diversify food imports and strengthen resilient agricultural sourcing networks, verified low-emission rice supply chains within Southeast Asia are increasingly being viewed as both a climate imperative and a strategic necessity.

Industry observers view the collaboration as part of a broader shift underway across Asian agriculture, where future competitiveness is expected to depend not only on productivity gains but also on the ability to deliver measurable environmental performance, resource efficiency and supply-chain traceability.

The partnership additionally signals growing momentum behind climate-smart rice systems capable of integrating scientific innovation, farmer economics and carbon accountability into commercially scalable agricultural models.

As global food systems confront intensifying climate volatility, water stress and pressure to decarbonise, the Rize-TLL alliance seeks to position Southeast Asia at the forefront of next-generation sustainable rice production.