



KAMARAJ IAS ACADEMY
Only IAS Academy by Grandson of "Perunthalaivar Kamarajar"

NSF Announces AI-ENGAGE Awards to Modernise Agriculture

Published On: 16-02-2026



The initiative is implemented in partnership with national research agencies of Australia, India and Japan — making it a signature research collaboration under the Quadrilateral Security Dialogue (Quad) framework.

Key Objectives of the AI-ENGAGE Initiative

Modernise agriculture by integrating AI and emerging technologies for improved crop management, pest detection and yield forecasting.

Advance agricultural resilience and food security by providing farmers with tools and AI-driven solutions tailored to local conditions.

Ensure that each awarded project includes researchers from at least three Quad countries, fostering cross-border expertise exchange.

Examples of Projects Supported

The **AI-ENGAGE** awards support diverse agricultural solutions, including:

Autonomous robots for early disease detection in orchards.

AI-based smartphone apps and chatbots for real-time pest and disease management.

Computer vision systems to estimate crop yields and detect crop lodging.

AI-driven genomic selection models for breeding resilient crop varieties.

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These projects involve collaborations among universities and institutions from Quad countries.

About NSF

The **National Science Foundation (NSF)** is an independent U.S. federal agency that supports fundamental research and education in all non-medical fields of science and engineering.

It plays a key role in international research collaborations, innovation leadership and advancing global scientific knowledge.

About the Quad

The Quadrilateral Security Dialogue (Quad) is a strategic partnership involving India, the United States, Japan and Australia. It focuses on areas such as security cooperation, climate change, infrastructure, technology and health in the Indo-Pacific region.

Quad initiatives often support research partnerships, capacity building and technology development, reflecting shared priorities among member countries.

Additional Facts:

Precision Agriculture: A farming management concept based on observing, measuring and responding to inter- and intra-field variability in crops, often using AI, GPS, drones and sensors.

Food Security: Ensuring that all people have access to sufficient, safe and nutritious food at all times — a key UN Sustainable Development Goal (SDG 2).

Machine Learning (ML): A subset of AI that enables systems to learn and improve from data without explicit programming, widely used for agricultural decision-making tools.

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