



International Commission of Agricultural and Biosystems Engineering

September 2026

Newsletter 146

"...to serve - on a world-wide basis and through its members - the needs of humanity by fostering mutual understanding, improvement and rationalisation of sustainable biological production systems while protecting nature and environment and managing landscape through the advancement of engineering and allied sciences..."

Web: www.CIGR.org

Journal: www.CIGRjournal.org

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Call for Expressions of Interest to Host the 2032 CIGR International Meeting

The International Commission of Agricultural and Biosystems Engineering (CIGR) invites Expressions of Interest from institutions and organizations interested in hosting the **2032 CIGR International Meeting**.

Held every four years and alternating with the CIGR World Congress, the CIGR International Meeting provides an important global forum for researchers, educators, industry leaders, practitioners, policymakers, and students to exchange knowledge, present advances in agricultural and biosystems engineering, and strengthen international collaboration.

Institutions interested in hosting the 2032 International Meeting are invited to submit an initial **Expression of Interest**. At this stage, a brief submission document should provide sufficient information to demonstrate the suitability of the proposed venue and the capability of the host organization(s). Selected candidates will subsequently be invited to prepare a comprehensive proposal.

Expression of Interest

The Expression of Interest should include:

- Proposed host city and country.
- Lead host institution(s) and collaborating organizations.
- Proposed conference venue(s) and meeting facilities.
- Tentative meeting dates or preferred time of year.
- Accessibility through international transportation.
- Availability of accommodations across a range of price categories.
- Experience organizing international scientific conferences.
- Preliminary description of the local organizing committee.
- Brief statement explaining why the proposed location is well suited to host the 2032 CIGR International Meeting.

Tentative Timeline

1. Call for Expressions of Interest: October 2026

2. Deadline for Expressions of Interest: May 31, 2027
3. Invitation to Submit Full Proposals: June 2027
4. Submission of Full Proposals: January 31, 2028
5. Presentation of Candidate Venues: During the 2028 CIGR International Meeting in New Delhi, India.
6. Selection of the Host Venue: During the 2028 CIGR International Meeting in New Delhi, India, following the presentations by the candidate hosts, deliberation and vote by the CIGR Executive Board.

Evaluation Criteria

Proposals will be evaluated based on:

- Quality and capacity of conference facilities.
- International accessibility.
- Strength and experience of the local organizing committee.
- Financial feasibility.
- Availability of accommodations.
- Opportunities for technical tours and cultural activities.
- Support from universities, research institutions, government agencies, professional societies, and industry.
- Commitment of the organization to resiliency and robustness.
- Potential to attract broad international participation.

Submission

Expressions of Interest should be submitted electronically to the **CIGR Secretary General** by **January 31, 2027**.

Detailed proposal guidelines will be provided to institutions invited to submit full proposals. CIGR welcomes proposals from all regions of the world and looks forward to receiving innovative and competitive bids to host the **2032 CIGR International Meeting**. Finalists will be required to make a presentation in person at the 2028 International Congress in New Delhi, India.

Research in Agricultural Sciences – An Open-Access Journal from Türkiye

The **September 2026 issue of *Research in Agricultural Sciences*** (Volume 57, Issue 3) is now available online. Published by the **Faculty of Agriculture of Atatürk University, Türkiye**, the journal is a peer-reviewed, open-access, online publication covering a broad range of agricultural sciences, including biosystems engineering, agricultural mechanization, irrigation, soil and water resources, food engineering, crop production, animal sciences, and agricultural economics. The journal is published three times annually—in January, May, and September—and is edited by **Prof. Dr. Göksel Tozlu**.

The new issue includes **nine research articles and one review**, addressing topics of considerable interest to the agricultural and biosystems engineering community. Among them are studies on uncertainty in soil-fertility prediction; estimation of reference evapotranspiration using regression methods and artificial neural networks; sustainable rice production using biochar and controlled irrigation to conserve water and reduce greenhouse-gas emissions; maize productivity and food security in Nigeria; climate-data integration for temperature mapping; and approaches for improving soil physical properties and grapevine performance. The issue also includes a review examining the challenges and opportunities for legume fodder under climate change.

Research in Agricultural Sciences is indexed in major international databases including **Scopus, DOAJ, Web of Science–Zoological Record, CABI, CAB Abstracts, EBSCO, ProQuest, CNKI, MIAR, and TR Dizin**, among others.

The September issue and individual open-access articles can be accessed through the journal's website:

[Research in Agricultural Sciences – September 2026 Issue](#)



FAO Invites the CIGR Community to the Science and Innovation Forum 2026

The **Food and Agriculture Organization of the United Nations (FAO)** is inviting scientists, researchers, innovators and professionals from across disciplines and career stages to participate in the **FAO Science and Innovation Forum 2026 (SIF 2026)**, to be held **12–16 October 2026** at FAO Headquarters in Rome, Italy, with opportunities for online participation. This will be the fifth edition of the Forum and will take place within the framework of the **World Food Forum (WFF)**, alongside the Global Youth Forum and the Hand-in-Hand Investment Forum.

Under the theme **“Innovate today. Nourish tomorrow.”**, SIF 2026 will focus on the role of science,

technology and innovation in transforming agrifood systems to make them more efficient, inclusive, resilient and sustainable. The Forum will bring together scientists, innovators, policymakers, farmers' organizations, development partners, the private sector and other stakeholders to exchange knowledge, establish partnerships and explore how scientific advances can be translated into practical solutions.

Of particular relevance to the **CIGR community** is the Forum's emphasis on moving innovation from research into application. Agricultural and biosystems engineers have an important role in this process through the development and application of technologies for

sustainable production, water and soil management, mechanization and automation, digital agriculture, energy, post-harvest systems, and the many other engineering disciplines that contribute to sustainable agrifood systems.

The program also addresses issues extending beyond the development of individual technologies. FAO highlights the need for increased investment in agricultural research and innovation—particularly in low- and lower-middle-income countries—as well as stronger partnerships among governments, research institutions, development organizations, civil society and the private sector. One Forum session, for example, will examine agricultural research capacity and investment and how stronger data and indicators can help connect research investments with outcomes such as productivity, incomes, resilience, extension and technology adoption.

Prof. Charles Spillane, FAO Chief Scientist, has specifically encouraged broad participation by the international science and innovation community and has asked organizations and professional networks to disseminate the invitation. CIGR members, Technical

Sections, Working Groups, affiliated societies, researchers and students are therefore encouraged to explore the program and participate in SIF 2026.

Participation is open to all interested attendees, either **in person in Rome or virtually**, with registration required. FAO notes that in-person participants are responsible for their own travel and visa arrangements and that **in-person registration closes at midnight on 7 October 2026**.

[FAO Science and Innovation Forum 2026 – Information and Registration](#)

The Forum provides an opportunity for members of the global agricultural and biosystems engineering community to engage in the broader international dialogue on how science, engineering and innovation can contribute to sustainable and food-secure agrifood systems.



Ask ABE: A New Gateway to Agricultural and Biological Engineering

The **American Society of Agricultural and Biological Engineers (ASABE)** has introduced **Ask ABE**, an intelligent knowledge assistant designed to make it easier to find and use information

across ASABE's extensive professional and technical resources. Rather than requiring users to navigate multiple areas of the ASABE website and information resources, Ask ABE provides a conversational interface through which users can ask questions and discover relevant information.

Ask ABE is intended for a broad audience that includes ASABE members, students, researchers, industry professionals, partners, and others interested in agricultural and biological engineering. The service provides access to information about

ASABE programs and initiatives, events, membership, student and young-professional opportunities, publications, professional development, and technical resources.

An important feature of Ask ABE is its **three levels of access**. Public Access provides an entry point for anyone interested in exploring ASABE and the profession. The Member Experience expands access for ASABE members, helping them locate benefits, committees and communities, professional-development resources, events, and publications. Premium Access is designed for those requiring deeper access to ASABE's technical resources, research, publications, professional knowledge base, and advanced information-discovery capabilities.

For the international agricultural and biosystems engineering community, Ask ABE represents an

important development in making professional knowledge easier to discover and use. Agricultural and biological engineering encompasses a very broad range of disciplines, and decades of research, standards, conference papers, publications, and other technical information can be difficult to navigate using conventional searches. An intelligent knowledge assistant offers the potential to help users more quickly identify information relevant to a particular problem or area of interest.

The initiative is also particularly relevant to **CIGR and its global network**. CIGR member societies share the objective of improving access to agricultural and biosystems engineering knowledge and facilitating its application by researchers, educators, students, professionals, and other stakeholders worldwide. Tools such as Ask ABE can contribute to making the collective knowledge of the profession more accessible and useful, while creating new opportunities for connecting

information produced by professional organizations around the world.

CIGR and ASABE are exploring opportunities to increase the visibility and accessibility of CIGR knowledge resources. Such collaboration can help extend the international scope of knowledge available through the platform and provide another pathway for disseminating agricultural and biosystems engineering research to a global audience.

CIGR members are encouraged to explore Ask ABE and become familiar with this new approach to accessing professional and technical information.

[Explore Ask ABE](#)



Professor Remigio Berruto Begins Term as EurAgEng President

Professor Remigio Berruto has taken office as President of the [European Society of Agricultural Engineers \(EurAgEng\)](#) for the **2026–2028 term**, bringing extensive experience in agricultural and biosystems engineering and a

long history of leadership within both EurAgEng and CIGR.

Professor Berruto is a Full Professor at the **University of Turin, Italy**, in the Interuniversity Department of Regional Studies and Planning (DIST). His research and professional activities have focused on agricultural machinery systems, logistics, and engineering approaches for improving the efficiency and sustainability of agricultural production.

He is well known to the CIGR community. Professor Berruto served as **CIGR President during 2021–2022**

and subsequently as Past President and Honorary President. He has also contributed to CIGR technical activities, including leadership of the Logistics Working Group, and has been recognized as a **CIGR Fellow** for his contributions to the profession.

His new role follows the successful **CIGR–EurAgEng World Congress 2026 in Torino**, where Professor Berruto, together with Professor Patrizia Busato, served as co-convenor. The Congress brought together more than **650 researchers, professionals and industry representatives from over 60 countries** under the theme “*Emerging Technologies and Innovation in Biosystems Engineering*.” The event demonstrated the breadth of current developments in the profession, ranging from automation and digital technologies to sustainable production systems and natural-resource management.

During his presidency, Professor Berruto will support EurAgEng's efforts to promote excellence in agricultural

engineering, encourage the development of young professionals, strengthen international cooperation, and enhance connections among research, industry and practical applications.

His appointment also provides an opportunity to further strengthen the longstanding relationship between **CIGR and EurAgEng**. This collaboration will continue toward the next major joint event, the **AgEng2030–XXII CIGR**

World Congress in Leuven, Belgium, bringing the international and European agricultural and biosystems engineering communities together once again.

CIGR congratulates **Professor Remigio Berruto** on his appointment and looks forward to continued close cooperation with EurAgEng during his term.

[Read the original EurAgEng announcement](#)

Register Soon for the 26th ICID International Congress — Marseille, October 2026

Professionals working in agricultural and biosystems engineering, irrigation, drainage, water resources, climate resilience, and related fields are invited to participate in the **26th International Congress of the International Commission on Irrigation and Drainage (ICID)**, to be held **12–17 October 2026 in Marseille, France**, together with the 77th International Executive Council Meeting. The Congress theme is **“Water and Agricultural Resilience in the Face of Climate Change.”**

The **International Commission on Irrigation and Drainage (ICID)** is an international organization dedicated to advancing the science and practice of sustainable agricultural water management, particularly irrigation, drainage, and related aspects of water and food security. Since 1951, ICID has organized its International Congress on Irrigation and Drainage as a global forum where researchers, engineers, practitioners, institutions, and other stakeholders exchange knowledge

and develop responses to emerging water-sector challenges.

The Marseille Congress will address issues of particular relevance to the CIGR community, including the role of irrigation and drainage in the agro-ecological transition, technologies and practices for improving water-use efficiency, remote sensing and intelligent irrigation management, and the use of non-conventional water resources such as treated wastewater and desalination. The program brings together technical sessions, an international symposium, workshops, special sessions, technical visits, and opportunities for international professional exchange.

CIGR encourages professionals interested in engineering solutions for sustainable water management and resilient agricultural systems to learn more and participate.

[26th ICID International Congress – Marseille 2026](#)

Agricultural and Biosystems Engineering: A Global Perspective

Fedro S. Zazueta

Agricultural and biosystems engineering continues to evolve rapidly as researchers, industry, and governments around the world respond to the challenges of climate change, resource constraints, labor shortages, and the need for more productive sustainable, and resilient food systems. Recent developments across the world demonstrate the breadth of innovation taking place—from autonomous machinery, robotics, drones, and precision irrigation to digital agriculture, artificial intelligence, sensing technologies, and climate-resilient production systems.

A particularly important transformation is being driven by the convergence of digital agriculture, artificial intelligence (AI), and advanced sensing technologies. These technologies enable farmers and agricultural professionals to move from uniform, input-intensive management toward more precise, data-driven decision-making. Satellite imagery unmanned aerial vehicles, soil and crop sensors, weather stations, and Internet-of-Things (IoT) devices can continuously collect information on crop growth, soil moisture, nutrient status, **pests**, diseases, and environmental conditions. When these data are combined with AI and machine-

learning models, they can support early detection of crop stress, yield forecasting, variable-rate application of fertilizers and pesticides, and more efficient irrigation. For example, sensor-based irrigation systems can apply water according to measured soil moisture and crop demand rather than relying on fixed schedules, while computer-vision systems can identify weeds and enable targeted herbicide application or mechanical weed control. Similarly, AI-supported analysis of satellite and drone imagery can identify areas of crop stress before symptoms are readily visible to the human eye, allowing producers to intervene earlier and potentially reduce input use and crop losses.

These technologies are also expanding the role of automation and robotics in agriculture. Autonomous tractors and field robots can use positioning systems, cameras, lidar, and other sensors to navigate fields and perform tasks with increasing precision. In protected agriculture, sensors and AI-based control systems can continuously adjust temperature, humidity, lighting, irrigation, and nutrient delivery to maintain favorable growing conditions while reducing energy and resource consumption. Digital platforms can further integrate farm, weather, market, and environmental data, helping producers optimize operations and document resource use. Collectively, these developments illustrate how agricultural and biosystems engineering is contributing not only to higher productivity, but also to improved water and nutrient-use efficiency, reduced chemical inputs, lower environmental impacts, and greater resilience to climate variability.

At the same time, the global adoption of these technologies presents important engineering and societal challenges. Connectivity, affordability, interoperability, data quality, cybersecurity, technical skills, and equitable access can determine whether digital innovations generate benefits across different scales of farming and regions of the world. Consequently, the future of digital agriculture will depend not only on developing increasingly sophisticated technologies, but also on designing systems that are **practical, accessible, reliable, environmentally sustainable and climate resilient**.

Following below are some notable examples of how these technologies are being used in agriculture, loosely organized by region.

Africa

Much of the current activity combines machinery with the systems needed to make it work: irrigation infrastructure, research capacity, financing, training, and maintenance. Some announcements describe approved funding or equipment handovers, so their longer-term farm-level impact will depend on implementation and access for producers.

- [Africa-wide](#)— new push for sustainable mechanization (February 2026). At a regional conference in Dar es Salaam, Tanzania launched its **2026–2036 National Agricultural Mechanization Strategy**. FAO emphasized that equipment needs local adaptation, financing, training, repair services, and support for women and young people to be useful over the long term.
- [Ethiopia](#)— machinery and pumps delivered to farming regions (May 2026). The Ministry of Agriculture reported handing over tractors, irrigation pumps, and fodder balers in Oromia, with additional tractors for Sidama. The equipment is intended to support mechanization and agricultural value chains.
- [Ghana](#)— rice production investment includes irrigation and mechanization (August 2026). The African Development Bank approved an **\$18.8 million grant** for climate-resilient rice production, including improved access to machinery, irrigation, and land development.
- [Uganda](#)— large irrigation and agro-industrialization program approved (June 2026). The African Development Bank approved a **\$140 million program** that includes irrigation expansion, agro-industrial development, and support for rural jobs and incomes.
- [Nigeria](#)— research farm upgrades bring irrigation and mechanized equipment into operation (January 2026). The International Institute of Tropical Agriculture commissioned new irrigation systems and farm machinery to strengthen its research and breeding operations.
- [Continental technology transfer](#)— funding to scale agricultural innovations (February 2026). The African Development Bank awarded IITA a **\$16.6 million grant** to expand proven agricultural technologies, strengthen seed systems, and extend

digital tools and partnerships with governments and businesses.

Asia

Across the region, engineering efforts are increasingly focused on practical labor-saving equipment, postharvest systems, digital machinery planning, precision irrigation, and robotics. Several initiatives are still in the pilot or demonstration stage, so reported plans should be distinguished from technologies already in routine farm use.

- [Vietnam](#)— digital planning for Mekong Delta rice farming (May 2026). IRRI and Vietnamese partners demonstrated digital farm-management tools and machinery suitability maps in Can Tho. The project aims to match machinery and services to local conditions and support the Mekong Delta’s low-emission rice program.
- [India](#)— expanded mechanization and drone demonstrations (July 2026). India’s farm mechanization program reported support for more than 2.16 million machines since its start, along with over 40,900 agricultural-drone demonstrations across the country. The program includes machinery-sharing centers intended to improve access for smaller farms.
- [Philippines](#)— new rice machinery and a longer-term policy agenda (July and September 2026). PhilMech reported delivering **1,731 machines** in the first half of 2026, including tractors, combine harvesters, dryers, and precision seeders. A September national summit produced 40 recommendations on mechanization, irrigation, standards, and a proposed 2027–2050 mechanization roadmap.
- [Japan](#)— remotely monitored autonomous tractors (August 2026). Kubota announced a Japan launch planned for April 2027 of tractors that can operate autonomously while being monitored remotely. The machines use cameras and radar to detect people and obstacles; the announcement presents the technology as a response to farm labor shortages.
- [Malaysia](#)— solar-powered irrigation and satellite-guided machinery (September 2026). At the MAHA agricultural show, BERNAS presented a prototype system using solar pumps, water-level sensors, and smartphone controls, alongside an auto-steer system

for planting and harvesting equipment. The irrigation system is still undergoing cost-benefit analysis, with pilot use planned.

- [China](#)— agricultural robotics in field competitions (August 2026). A tomato-harvesting robot developed by the Chinese Academy of Sciences’ Institute of Automation won a 2026 smart-agriculture innovation competition. The competition also featured technologies such as laser weeding robots and intelligent machinery control.

Europe

European projects are moving beyond stand-alone technology demonstrations toward farm trials, interoperable digital tools, and commercial deployment. Connectivity remains part of the challenge: an EU study found that farmers rely on connected tools but need systems that can work through gaps in rural coverage

- [Europe](#)— open-source tools aim to make digital farming easier to adopt (September 2026). The EU-funded OpenAgri project is developing interoperable components for irrigation, crop protection, disease-risk assessment, and farm reporting. A free decision-support tool is in beta, and field pilots in five countries are testing solutions under different farm conditions.
- [United Kingdom](#)— raspberry-picking robots begin commercial farm trials (September 2026). Cambridge-based Fieldwork Robotics has moved its autonomous berry-harvesting robots into trials on UK farms, following earlier development and validation. The company is preparing to scale up and plans further international trials.
- [Germany](#)— student teams test field robots under farm conditions (June 2026). At the Field Robot Event in Bernburg, 16 teams from 10 countries competed on tasks including maize-row navigation, plant-health detection, biodiversity monitoring, and spot treatment. The event highlighted how much success depends on integrating sensors, AI, machine design, and reliable field operation.
- [France, Portugal, Cyprus, and Greece](#)— precision-viticulture tools demonstrated in working vineyards (July 2026). The SmartVitiNet project tested systems combining drones, sensors, AI, and decision-support tools across five live

demonstrations. The project also launched training resources to help vineyard operators use the technology.

- [Spain](#)— Galileo’s high-accuracy positioning tested for precision farming (May 2026). EUSPA and industry partners tested Galileo High Accuracy Service with a tractor in a field setting. The test recorded horizontal positioning errors of 3–6 cm and pass-to-pass accuracy of 1.18 cm—results that may help reduce overlaps in field operations. These figures describe the test campaign, not guaranteed performance in every setting.

North America, Central America, and the Caribbean

Across the region, engineering innovation is addressing water use, labor, crop monitoring, energy efficiency, and marine biomass. Some efforts are already delivering equipment or testing practices with producers; others remain in development or demonstration. Their longer-term impact will depend on cost, reliability, and fit with local needs.

- [Canada](#)— \$50 million to expand agri-food automation and testing (August 2026). Federal funding will support the Canadian Agri-Food Automation and Intelligence Network as it expands smart farms and commercial demonstration sites. The program expects to fund at least 40 technology projects, helping move innovations toward testing and adoption.
- [Canada](#)— AI imaging adapted for vineyard monitoring (September 2026). Agriculture and Agri-Food Canada announced up to \$1.69 million to adapt an equipment-mounted camera system for vineyards. Machine-learning models are being developed to detect disease, assess fruit quality, and estimate yields; the work is still in development.
- [Canada](#)— more efficient lighting for indoor agriculture (September 2026). A Calgary company received support to develop and test lighting and control technology for indoor farms. Controlled tests reported similar harvest weight to conventional LED lighting while using up to 80% less electricity; commercial-scale validation is underway.
- [Caribbean](#)— engineering responses to record sargassum blooms (August 2026). Governments and

businesses are expanding seaweed collection with specialized boats and offshore barriers, while companies explore processing harvested sargassum into fertilizer, biofuel, and bioplastics. These approaches are at different stages, and large-scale commercial use remains limited.

- [Guatemala](#)— demonstration farm tests ways to retain rainwater (September 2026). On a demonstration plot in San Jerónimo, the Ministry of Agriculture is testing Keyline-pattern tillage, contour marking, and other practices to improve rainwater infiltration and soil moisture for maize and beans. The plot also supports training and research, with the practices intended for possible use in other production areas.
- [Honduras](#)— drip irrigation and reservoirs help farmers manage drought (July 2026). A climate-resilience project delivered 289 drip-irrigation systems and 100 geomembrane-lined water reservoirs to farmers in the western Dry Corridor. The project combines this equipment with technical assistance to help producers use and maintain the systems.
- [Mexico](#)— irrigation modernization to produce more with less water (2026). CONAGUA is advancing a national program to modernize irrigation across 250,000 hectares. In Morelos, planned work includes drip irrigation and other water-delivery upgrades aimed at improving agricultural water efficiency.
- [United States](#)— national network to test agricultural technologies (April 2026). USDA launched a network to evaluate commercial and pre-commercial ag technologies under real farm and ranch conditions. It aims to give producers reliable information on performance and costs before they invest.
- [United States](#)— sensors and a “digital twin” for irrigation and fertilizer decisions (February 2026). USDA-funded researchers combined field sensors with drone and satellite data and crop-growth models to track crop conditions and guide input use. The team is working to make the system more durable and easier to integrate with farm equipment.
- [United States](#)— a weed-killing robot wins the Farm Robotics Challenge (June 2026). Cornell students’ autonomous prototype uses targeted electrical pulses to control weeds in vineyards and orchards without

herbicides. The team plans further development and grower validation before commercialization.

Oceania

In Australia and New Zealand, recent activity centers on digital sensing, drones, and automation. In Pacific Island nations, investment is more focused on reliable water access, climate adaptation, and practical farm technologies suited to local conditions.

- [Australia](#)— grants to help farmers adopt agtech (August 2026). New South Wales announced a **\$1.4 million Smart Farming Program** for the Central-West Orana region. Eligible purchases include soil and water sensors, drones, crop and livestock monitoring, and connectivity equipment; grants can cover up to 70% of costs, with a \$35,000 cap. Applications were expected to open in the coming months.
- [Australia and New Zealand](#)— AI system aims to improve soil-moisture estimates (May 2026). Researchers at the University of Canterbury and partner institutions are developing a platform that combines ground sensors, satellite signals, and AI modelling to estimate soil moisture at field scale several times a day. The project is in development, with a goal of providing publicly accessible data for irrigation and pasture decisions.
- [New Zealand](#)— autonomous weeding robot arrives for vegetable growers (August 2026). The Kilter AX-1, described as the first autonomous weeding robot to arrive for New Zealand vegetable growers, is being introduced for high-value crops where precise weed control and labor efficiency matter.
- [New Zealand](#)— drone rules are set to change for routine farm applications (August 2026). The government announced plans to simplify approvals for lower-risk agricultural drone operations, including spraying and spreading seed, fertilizer, lime, and manure. The revised pathway is scheduled to take effect in **mid-2027**, after further design and consultation.
- [Papua New Guinea](#)— drought response includes a move toward solar irrigation (September 2026). The Fresh Produce Development Agency began water deliveries to farm sites and said it is planning solar-powered pumping and community water systems as

longer-term measures. The water deliveries are underway; the solar and community systems were still in the planning stage in the report.

- [Samoa, Tonga, and Vanuatu](#)— climate-resilient agriculture program funded (2026). The Pacific Community announced **US\$42.06 million** in grant financing for a five-year program that will support demonstration farms, farmer training, technical assistance, and farm-level technologies. It is designed to improve soil health, water retention, and resilience to drought and cyclones.

South America

Across South America, engineering is connecting field sensors, satellite and drone imagery, and AI to practical decisions about irrigation, fertilizer, crop health, and farm operations. Some projects have reported field-trial results, while others are just beginning or are still planned for demonstration.

- [Brazil](#)— sensor-guided irrigation improves grape production in field trials (May 2026). Embrapa's Semear Digital project combines soil-moisture sensors, weather data, and infrared measurements of plant temperature to guide irrigation. In a São Paulo vineyard trial, irrigated vines averaged more than 30% more grape clusters per plant than non-irrigated vines. Researchers are now exploring thermal cameras to monitor larger areas and eventually support drone-based mapping.
- [Argentina](#)— satellite imagery and AI map center-pivot irrigation (January 2026). INTA researchers developed a method using Sentinel-2 satellite images and artificial intelligence to identify center-pivot irrigation systems. It can help track irrigation expansion and inform planning; researchers are working to improve the model and make it a practical monitoring tool.
- [Argentina](#)— precision technologies target sugarcane, yerba mate, and tobacco (January 2026). INTA is testing combinations of drone imagery, remote sensors, and AI in northern Argentina. For sugarcane, drone-mounted sensors can inform variable-rate nitrogen application; for tobacco, multispectral imaging and AI are being tested to identify crop stress and planting gaps.

- [Chile](#)— drones and sensors to improve forage production (April 2026). INIA La Cruz launched a project in the Valparaíso Region to test drones, sensors, and precision irrigation for livestock forage crops. The team plans to validate the technology with local producers and produce farm-level information on water use, costs, and yields.
 - [Colombia and Paraguay](#)— smart irrigation links sensors, AI, and automation (2026). A FONTAGRO-supported project plans to test an integrated system for fruit crops, including Tahiti lime and banana. It combines IoT sensor networks, AI-based irrigation decisions, remote operation, an irrigation robot, and a farmer-support chatbot. The project expects to train 2,500 farmers and technicians; field evaluation is still to come.
 - [Colombia](#)— digital agriculture program targets more than 6,700 producers (March 2026). The AgroTECH program is bringing satellite imagery, drone crop monitoring, digital field records, and agronomist support to producers in 14 departments. Its target includes at least 2,700 rural women.
 - [Ecuador](#)— drones and AI improve banana-crop monitoring. INIAP has tested drones combined with a digital platform to detect pests and diseases in banana plantations. The approach supports early intervention, more targeted pesticide application, and precision agriculture for small-scale producers.
 - [Guyana](#)— smart-farming project focuses on smallholders in the Amazon Basin (May 2026). IDB Lab and the University of Guyana launched an initiative to support 25,000 farmers with precision agriculture, AI, satellite imagery, IoT tools, demonstrations, and training. The project is intended to improve productivity and resource use while expanding farmers' access to digital technology.
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Upcoming Conferences Calendar

2026

1. 60th ISAE Annual Convention and International Symposium

October 5–7, 2026 | Srinagar, India

Jointly organized by the Indian Society of Agricultural Engineers and SKUAST-Kashmir, this event combines a broad agricultural engineering convention with the International Symposium on AI and Robotics for Gen-Z Farming. It connects smart-farming research with engineering innovations and applications in agricultural production. [Conference website](#)

2. 26th ICID International Congress and 77th IEC Meeting

October 12–17, 2026 | Marseille, France

The International Commission on Irrigation and Drainage convenes this event under the theme “Water and agricultural resilience in the face of climate change.” Topics include irrigation and drainage for agroecological transitions, water-use efficiency, innovative equipment and remote sensing, and nonconventional water resources. Congress sessions run October 12–14, with the wider congress and ICID meeting program extending through October 17. [Congress website](#) | [Program and ICID meetings](#)

3. PAWEES 2026 International Conference

October 19–21, 2026 | Chuncheon, South Korea

Organized by the International Society of Paddy and Water Environment Engineering and Korean partners, this meeting focuses on agricultural water systems and climate resilience. Themes include soil–water–carbon interactions, artificial intelligence and digital twins, water quality, and nature-based solutions. [Conference information](#) | [Technical themes](#)

4. USCID Conference 2026

October 20–23, 2026 | Reno, Nevada, USA

The U.S. Committee on Irrigation and Drainage conference focuses on “Irrigation Delivery Operations: Adapting to Current and Future Demands.” It brings together irrigation and drainage specialists, water district staff, consultants, and researchers to discuss infrastructure upgrades, technology, maintenance, organizational operations, and sustainable management of water supply and demand. [Organizer website](#) | [Conference scope and topics](#)

5. IAgRE Landwards Conference 2026

October 21, 2026 | Harper Adams University, United Kingdom

The Institution of Agricultural Engineers’ conference examines how agricultural automation moves from research into commercial farming. Presentations cover robotics, autonomous machinery, technology adoption, and practical challenges such as safety, labor availability, and operational efficiency. [Conference website](#)

6. South African Institute of Agricultural Engineers Biennial Symposium

October 21–23, 2026 | Upington, South Africa

Under the theme “Driving Agricultural Growth through Engineering Excellence,” this symposium covers a broad range of agricultural engineering applications. Topics include mechanization, irrigation, precision agriculture, renewable energy, soil conservation, and food engineering and postharvest management. [Symposium website](#)

7. 4th International Conference on Agriculture Centric Computation

November 1–4, 2026 | IIT Ropar, Punjab, India

Hosted by ANNAM.AI, IIT Ropar's Centre of Excellence in Artificial Intelligence for Digital Agriculture, ICA 2026 focuses on computational approaches to agricultural challenges. Its theme, "AI Meets Farm – Digital Agriculture for a Sustainable Future," is relevant to researchers working at the intersection of computing, artificial intelligence, and agricultural systems. [Conference website](#)

8. 16th International Conference of the Asia Pacific Federation for Information Technology in Agriculture

November 4–6, 2026 | Taipei, Taiwan

APFITA 2026 focuses on agricultural informatics, digital agriculture, and smart farming, connecting academic research with practical applications. Topics include agricultural big data, AI and generative AI, remote sensing, geospatial decision-making, edge computing, agricultural IoT, and smart automation. [Conference website](#) | [Co-organizer announcement and topics](#)

9. IEEE International Workshop on Metrology for Agriculture and Forestry

November 9–11, 2026 | Potsdam, Germany

MetroAgriFor 2026 addresses measurement and data-processing methods for agriculture, forestry, and food systems. Its program includes digital technologies and AI for sustainable agriculture, sensor networks, agricultural data analytics, and interoperable sensing infrastructures that support farm decision-making. [Event website](#) | [Digital agriculture and AI session](#)

10. 83rd International Conference on Agricultural Engineering LAND TECHNIK AgEng 2026

November 10–11, 2026 | Dresden, Germany

This conference brings together agricultural machinery researchers and industry engineers to discuss equipment development and emerging technologies. The program includes tractors, powertrains, harvesting machinery, agricultural automation, renewable energy, and digitalization. [Conference website](#)

11. International Agricultural Engineering Conference IAEC 2026

November 26–28, 2026 | Bali, Indonesia

Organized through the Asian Association for Agricultural Engineering and hosted by the Indonesian Society of Agricultural Engineering, IAEC 2026 focuses on appropriate technologies for climate-resilient farming. Its scope includes machinery, soil and water engineering, postharvest processing, agricultural systems, artificial intelligence, robotics, energy, and the environment. [Organizer announcement](#) | [Registration and topics](#)

12. Irrigation Show and Education Week 2026

December 7–10, 2026 | Las Vegas, Nevada, USA

Organized by the Irrigation Association, this industry event combines education classes, industry sessions, networking, and an irrigation technology exhibition. It offers irrigation professionals opportunities to develop technical skills and explore equipment and services. Education Week runs December 7–10; the trade show runs December 9–10. [Event website](#)

13. 63rd Annual Joint North Dakota Water Convention and Irrigation Workshop

December 8–10, 2026 | Bismarck, North Dakota, USA

This regional convention combines water-resource discussions with an irrigation workshop, bringing together the North Dakota water and irrigation community. It provides a practical forum for professionals interested in irrigation development and water management. The venue is the Bismarck Hotel and Conference Center; the detailed agenda is forthcoming. [Convention website](#)

2027

14. Agri WEF 2027

February 2–4, 2027 | Kharagpur, India

The conference on Next-Generation Precision Agriculture for Climate-Resilient Water-Energy-Food Systems is organized by IIT Kharagpur's Agricultural and Food Engineering Department. It connects precision agriculture with water, energy, and food-system resilience, covering intelligent water management, smart machinery, automation, food processing, postharvest technologies, aquaculture, and biotechnology. [Conference website](#)

15. ASABE Agricultural Equipment Technology Conference AETC 2027

February 7–10, 2027 | Louisville, Kentucky, USA

AETC is a specialized meeting for agricultural machinery professionals, bringing together researchers, academics, and industry engineers. It provides a forum for discussing advances in agricultural equipment and emerging technical issues affecting machinery development and use. [ASABE event page](#)

16. 65th California Irrigation Institute Conference

February 17–18, 2027 | California, USA; city and venue to be announced

The California Irrigation Institute's annual conference provides a forum for irrigation and water-management professionals. The institute has announced the dates of its 65th conference; the 2027 program and venue are still to be confirmed. This meeting is relevant to irrigation engineering, water-use efficiency, and agricultural water management. [Organizer conference page](#)

17. World Irrigation Technology Conference and China International Irrigation Technology Exhibition 2027

March 29–31, 2027 | Beijing, China

This combined conference and exhibition focuses on irrigation technologies and smart agriculture. Held at the China National Convention Center, it brings together technology suppliers and irrigation professionals to exchange technical developments and explore applications of modern irrigation equipment and systems. [Event website](#)

18. Waste to Worth 2027

April 12–16, 2027 | Raleigh, North Carolina, USA

This ASABE-endorsed conference brings together professionals concerned with environmental stewardship in livestock and poultry production. It is relevant to agricultural and biosystems engineers working on animal-agriculture waste management and the environmental performance of production systems. [Conference website](#)

19. 7th International Conference on Agriculture Digitalization and Organic Production

May 31–June 3, 2027 | Moscow, Russia

ADOP 2027 brings together agriculture, robotics, information technology, biology, and economics to address digital transformation in agricultural production. Its topics include digital technologies and automation in crop production, animal husbandry, and aquaculture, alongside agricultural robotics and sustainable production systems. [Conference website](#)

20. XIV Iberian Congress of Agroengineering AgroIng 2027

June 2–4, 2027 | Cartagena, Spain

Hosted at the Universidad Politécnica de Cartagena, this congress brings together researchers, educators, students, and professionals to exchange scientific and technological advances in agro-engineering. It offers a broad forum for agricultural engineering research and collaboration across the Iberian community. [Congress website](#) | [Society official announcement](#)

21. 15th International Conference on Agro Geoinformatics

June 28–July 1, 2027 | Istanbul, Türkiye

This conference focuses on collecting, processing, analyzing, and applying geospatial information in agriculture. Topics include remote sensing, agricultural digital twins, artificial intelligence, decision-support systems, precision agriculture, and monitoring agricultural ecosystems and greenhouse gases. [Conference website](#)

22. 16th European Conference on Precision Agriculture ECPA 2027

July 11–15, 2027 | Copenhagen, Denmark

Organized locally by Aarhus University in collaboration with the University of Copenhagen, ECPA provides an international forum for precision agriculture research and applications. It is particularly relevant to engineers working on technologies and management approaches that improve the precision and efficiency of agricultural production. [Official conference page](#)

23. ASABE Annual International Meeting AIM 2027

July 18–21, 2027 | New Orleans, Louisiana, USA

ASABE's annual meeting spans agricultural and biological engineering, including machinery, energy, sensors and controls, natural resources, processing, and plant and animal production facilities. Its technical program also includes circular bioeconomy systems, education, professional development, and engineering safety. [Conference website](#)

24. 5th World Irrigation Forum WIF5

September 2027; exact dates to be confirmed | Beijing, China

ICID's World Irrigation Forum is planned around the theme "Modernization of Irrigation Systems." It addresses technical improvements, management practices, policy, financing, and performance assessment for more effective irrigation systems. ICID's calendar currently displays September 1 as both the start and end date; the full event dates require confirmation. This entry is placed at the beginning of September for chronological reference. [ICID event page](#)

25. AI in Agriculture AgriAI at FedCSIS 2027

September 12–15, 2027 | Gdynia, Poland

This dedicated agricultural AI thematic session forms part of the FedCSIS conference. It covers computer vision, machine learning, big data, decision-support systems, geospatial AI, agricultural digital twins, data spaces, robotics, and predictive applications such as crop forecasting and irrigation management. [Session website](#)

26. 12th Asian Australasian Conference on Precision Agriculture ACPA 12

September 15–18, 2027 | Kobe, Japan

ACPA 12 addresses precision crop and livestock systems, artificial intelligence, agricultural sensors, remote sensing, drones, and robotics. Additional themes include variable-rate irrigation, site-specific resource management, climate resilience, and the adoption and profitability of digital agricultural technologies. [Conference website](#)

27. IEEE Conference on AgriFood Electronics CAFE 2027

October 6–8, 2027 | Taipei, Taiwan

CAFE 2027 focuses on electronics and digital technologies throughout the agrifood value chain. Its scope includes robotics, IoT, sensor technologies, and edge AI for improving agricultural production, food processing, distribution, and information delivery while reducing environmental impacts. [Official IEEE event page](#)

28. Irrigation Show and Education Week 2027

November 15–18, 2027 | San Antonio, Texas, USA

The Irrigation Association's annual industry event combines professional education and an irrigation trade show. It offers opportunities to learn about irrigation practices, meet equipment and service providers, and exchange experience with other irrigation professionals. Dates and location are announced; the detailed 2027 program is forthcoming.

[Irrigation Association event calendar](#)

CIGR 2028: International Conference, 3-6 October 2028, New Delhi, India

The Indian Society of Agricultural Engineering (ISAE) was selected by the 2024 CIGR Executive Board as the organizer for 2028 CIGR International Conference. The venue of the conference will be in New Delhi, India.

