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EDITORIAL

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ENGINEERING Agriculture—Opening a new era for the engineering of agricultural science and technology

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As a new wave of scientific and technological revolution gathers force, China and the world are entering a new era of ecological civilization shaped by both unprecedented opportunities and profound challenges. In such a moment, the renewal of a journal is not merely an editorial decision. It is also an intellectual and institutional response to the questions of the age.

Since its launch in 2014, *Frontiers of Agricultural Science and Engineering* has completed a remarkable twelve-year journey. Over these years, the journal has remained rooted in the broad and fertile field of sustainable agricultural development, recording scientific and technological advances while steadily growing into an international forum for comprehensive agricultural scholarship. Twelve years mark not only a milestone, but also a new beginning. In 2026, in response to the strategic initiative of the Chinese Academy of Engineering to foster a world-class cluster of ENGINEERING journals, we made a decision of lasting significance. Beginning with this issue, the journal is officially renamed ***ENGINEERING Agriculture***. This is far more than a change of title. It reflects a renewed understanding of the future of agriculture and a conscious response to the demands of a changing era.

With this new name comes a broader and more consequential mission. ***ENGINEERING Agriculture*** is committed to advancing the engineering innovation and application of agricultural science and technology in ways that can fundamentally reshape agricultural development. It seeks to promote agricultural modernization and accelerate the transformation of agriculture through new quality productive forces. The scope of the journal has not narrowed. Rather, it has become more resolute, more expansive and more forward-looking. What we seek to emphasize is not agriculture in a limited technical sense, but the power of engineering science and technology to equip modern agriculture with stronger methods, deeper integration and greater transformative capacity.

We will continue to uphold green and sustainable agricultural development as a central and enduring commitment. At the same time, the path toward that commitment has become clearer. The future of agriculture depends not only on scientific discovery and technological invention, but also on the ability to translate those advances into integrated and effective systems of action. Breakthroughs at individual points must be connected, extended and coordinated so that they can evolve into practical solutions with real impact. Through systems

thinking and engineering integration, scientific and technological progress can be transformed into solutions that are operational in practice, replicable across regions and scalable for broader adoption. In this sense, ***ENGINEERING Agriculture*** will seek to be a distinctive academic platform where scientific inquiry and technological innovation are not only reported, but also advanced toward their engineering realization in response to real-world agricultural challenges.

Looking ahead, global agricultural modernization is entering a new phase characterized by the deep integration of intelligence and engineering. As artificial intelligence becomes increasingly embedded in agriculture, its role will extend from real-time sensing, diagnosis and monitoring in production processes to data-driven decision-making, precision management and the coordinated deployment of intelligent machinery and equipment at scale. Such developments are expected to generate simultaneous gains in productivity, efficiency, quality and resilience. Engineering-based agricultural management can substantially improve the efficiency of resource allocation and unlock the vast productive potential of biological and natural resources. At the same time, the rapid evolution of artificial intelligence is likely to move agricultural modernization beyond isolated technical applications and toward system-wide operation, allowing agriculture to progress from local improvement to structural transformation.

Yet the true meaning of agricultural engineering lies in bringing science and technology into the field. In this regard, the Science and Technology Backyard offers a representative and inspiring model. Starting from real problems in frontline agricultural production, it applies scientific methods and engineering approaches to develop solutions that are both practical and transferable. In doing so, it allows agricultural innovation to respond more directly to the needs of farmers and to be translated more effectively into real productive capacity. From a global perspective, the wider extension of this model carries particular significance. Taking an approach that has been tested and refined in China to broader regions, especially to address the needs of the Global South, may offer a pathway that is more affordable, more adaptable to local conditions, and more effective in supporting agricultural progress. At the same time, its relevance extends well beyond the Global South. In many developed economies, this model offers a pragmatic route to higher productivity with a lighter environmental footprint. Such efforts can contribute not only to improved production but also to the broader goals of reducing hunger, alleviating poverty, and advancing an inclusive and sustainable transformation of global agriculture.

We are committed to advancing a shared vision of green and sustainable agricultural development for the world. In this mission, ***ENGINEERING Agriculture*** will serve as a bridge between laboratory and field, between theory and application, and between science and engineering. We hope to bring together global wisdom so that broad visions may be shaped through engineering and policy design, while practical progress is achieved through grounded and cumulative innovation. Only by combining strategic vision with field-based implementation can society fully grasp the broader trajectory of modern agriculture and translate it into precise and actionable pathways. Through scientific innovation, engineering practice, institutional support and collective action at regional, national and global levels, the blueprint for agricultural modernization can be progressively turned into reality.

A new journey carries a new mission. At this important moment of transformation, on behalf of the Editorial Board and Editorial Office of ***ENGINEERING Agriculture***, I wish to reaffirm our shared commitment to serving the global scholarly community through an academic platform that is fair, rigorous and open. We value every original idea and every meaningful exchange of scholarship and we will continue to uphold the highest standards of academic integrity, editorial quality and intellectual openness.

I warmly invite scholars, innovators and practitioners around the world to join us as witnesses to, and participants in, this revitalized endeavor. The vitality of a journal is sustained by the wisdom and dedication of the community it serves. May ***ENGINEERING Agriculture*** become a productive space where the engineering innovation and application of agricultural science and technology can build momentum and flourish, and where the vision of green and sustainable development can stimulate lasting benefits. May we move forward together so that time may reveal value, science may answer the needs of the age and transformation may shape the future of agriculture.