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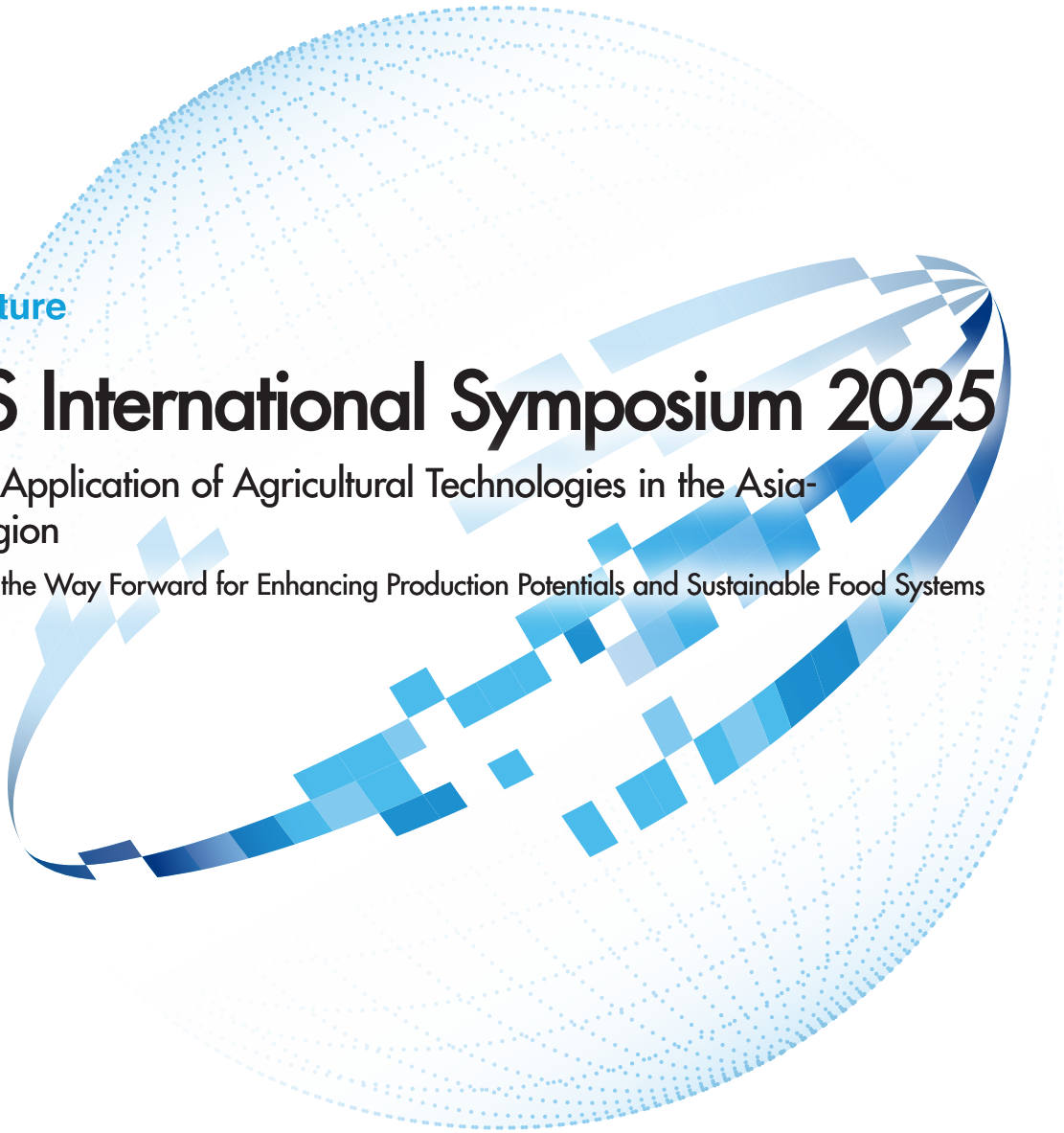

Special Feature

JIRCAS International Symposium 2025

Accelerating Application of Agricultural Technologies in the Asia-Monsoon Region

Taking Stock and the Way Forward for Enhancing Production Potentials and Sustainable Food Systems

Japan International Research Center For Agricultural Sciences

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Currently, agriculture, forestry, and fisheries form the foundation of food production. Agriculture and fisheries provide food directly, while forestry supports these industries by conserving water and soil and protecting the environment by nurturing trees, as well as contributing to food production through mushrooms and wild vegetables.

However, agriculture, forestry, and fisheries are sometimes greatly affected by weather conditions. For example, if the temperature rises above the optimum for crop growth or falls below it, or if there is drought, prolonged rain, or flooding, crop yields will decrease and quality will deteriorate. In the ocean, if the temperature rises and the seawater temperature increases sharply, the course of ocean currents may change, resulting in a decrease in catches or a change in the species of fish caught.

If excessive dry spells and wildfires occur, trees may be lost, and forest environments may change dramatically, affecting the water supply that is important for agriculture and the fishing industry. In other words, if weather conditions are unstable, the production of agriculture, forestry, and fisheries will be unstable, and the quality and quantity of food available on the market will also be unstable.

Because weather is a natural phenomenon, it is inevitable that it will be extreme at times. However, in recent years, extreme weather events have become more frequent.

The cause of this is thought to be global warming, and reports by the Intergovernmental Panel on Climate Change (IPCC) indicate that it is steadily progressing. Another contributing factor is thought to be the increase in greenhouse gases such as carbon dioxide, methane, and nitrous oxide. These gases are emitted by various industries, including agriculture and livestock farming.

Therefore, a new food system that is sustainable in terms of productivity and reduces greenhouse gas emissions is needed. In developing countries where the population continues to grow, a system that also improves productivity is necessary.

The Japan International Research Center for Agricultural Sciences (JIRCAS) has been conducting the Green Asia Project for the past four years with support from Japan's Ministry of Agriculture, Forestry and Fisheries, aiming to contribute to accelerating the transformation of food systems in the Asia-Monsoon region.

The "Technology Catalog," an output of the Green Asia Project, consists of scalable technologies developed by Japan's national research and development agencies and universities that can achieve both productivity and sustainability. The technologies are applicable to the Asia-Monsoon region, and the results of field trials conducted with the selected technologies in the region are expected to serve as effective demonstrations in local contexts.

This issue features the JIRCAS International Symposium 2025, "Accelerating Application of Agricultural Technologies in the Asia-Monsoon Region," which was held under the theme of the Green Asia Project.

The symposium introduced various initiatives for food systems transformation at global, regional, and national levels and featured interesting discussions on approaches to rapidly apply agricultural technologies to local areas. We hope this newsletter will provide readers with an opportunity to reflect on the global food system.

YANAGIHARA Seiji
Vice-President, JIRCAS

Report on the JIRCAS International Symposium 2025

The Japan International Research Center for Agricultural Sciences (JIRCAS) held the "JIRCAS International Symposium 2025" at Hitotsubashi Hall in Chiyoda-ku, Tokyo, on November 27, 2025. The theme of this symposium was "Accelerating Application of Agricultural Technologies in the Asia-Monsoon Region: Taking Stock and the Way Forward for Enhancing Production Potentials and Sustainable Food Systems."

This symposium was held in a hybrid format, combining an on-site venue with online participation, with simultaneous Japanese-English interpretation, under the auspices of the Ministry of Agriculture, Forestry and Fisheries (MAFF), the National Agriculture and Food Research Organization (NARO), the Forestry and Forest Products Research Institute (FFPRI), the Japan Fisheries Research and Education Agency (FRA), and the Japan Intellectual Support Network in Agricultural Sciences (JISNAS). Many researchers, government officials, and private sector representatives from Japan and abroad participated in the event.

Mr. KOYAMA Osamu, President of JIRCAS, delivered the opening remarks. He introduced the discussions held at the JIRCAS International Symposium in November 2021 on building sustainable food systems and the subsequent launch of the Green Asia Project in April 2022, in light of the development of the MIDORI Strategy for Sustainable Food Systems by the Japanese government in May 2021. He also explained that the project has been carried out with advice from the established International Scientific Advisory Board for Strategy "MIDORI," with a particular focus on building mechanisms to connect policy and science.

Next, Mr. SAKAIDA Teruya, Director General of the Agriculture, Forestry and Fisheries Research Council of MAFF, gave a speech in which he emphasized that it is extremely important to achieve sustainable agricultural production in response to climate change and to promote food security as a common global issue, including for Japan. He also introduced developments such as the formulation of the Basic Plan for Food, Agriculture and Rural Areas in 2025, following the revision of the Basic Act on Food, Agriculture, and Rural Areas in 2024.

Session 1 featured keynote speeches from three perspectives: the global context, the ASEAN region, and cooperation between Japan and ASEAN. Dr. Stefanos Fotiou, Director of the UN Food Systems Coordination Hub, delivered a speech titled "The Role of Science and Technology for Food Systems Transformation," pointing out that the importance of science and technology has never been greater in addressing complex challenges such as food problems and climate change. Following this, Dr. Pham Quang Minh, Head of the Food, Agriculture, and Forestry Division of the ASEAN Secretariat, introduced the background, objectives, and overview of the "ASEAN Cooperation on Food, Agriculture, and Forestry (FAF), Sectoral Plan for FAF," scheduled for implementation from 2026 to 2030. Furthermore, Dr. HAGIWARA Hideki, Counsellor (Deputy Director-General for Environment, Export and International Affairs Bureau), MAFF, explained the revised "ASEAN-Japan MIDORI Cooperation Plan," which is being advanced collaboratively by ASEAN and Japan.

In response to these presentations, Dr. FUNAKI Yasuro, Director of the Social Sciences Division and Project Leader of the Green Asia Project, JIRCAS, reported on the outline, key results, and lessons learned from the Green Asia Project.

In Session 2, an exhibition of agricultural technologies listed in the Technology Catalog was held in a separate conference room within Hitotsubashi Hall. Researchers involved in the development of the technologies listed in the Technology Catalog directly explained each technology and exchanged opinions with the participants.

In Session 3, members of the International Scientific Advisory Board introduced initiatives from their respective countries in Asia. Dr. Mohamad Zabawi bin Abdul Ghani, Director General of the Malaysian Agricultural Research and Development Institute (MARDI), introduced MARDI's initiatives for building

sustainable food systems under climate change. Additionally, Dr. Phisamai Srichayet, Researcher (Professional Level) at the Institute of Food Research and Product Development (IFRPD), Kasetsart University, Thailand, presented examples of transformation in Thailand's food and agriculture sector. These included creating added value through advanced agricultural product processing technologies and improved food safety, as well as promoting sustainable agricultural resource utilization.

The final session featured a panel discussion chaired by Dr. IIYAMA Miyuki, Program Director (PD for Information) at JIRCAS. The panel brought together members of the International Scientific Advisory Board—Prof. Shenggen Fan (Professor, China Agricultural University), Dr. Jacqueline Hughes (Executive Director, World Agriculture Forum; online), Prof. Joachim von Braun (Professor, University of Bonn; online), and Dr. Jean Balié (Special Advisor, FAO; via video message)—alongside the keynote speakers, Dr. Fotiou and Dr. Minh. They were joined by Mr. NOZAWA Satoshi (Director, International Research Collaboration Division, Agriculture, Forestry and Fisheries Research Council Secretariat, MAFF), Dr. SAITO Kazuki (Senior Scientist, International Rice Research Institute [IRRI]), and Dr. HAYASHI Keiichi (PD for Environment, JIRCAS).

During the discussion, in addition to evaluating the Green Asia Project, participants exchanged views from their respective standpoints on how the introduction and dissemination of agricultural technologies should be accelerated in various regions, including the Asia-Monsoon region.

FUNAKI Yasuro
Director, Social Sciences Division and
Project Leader, Green Asia Project, JIRCAS

Group photo of JIRCAS International Symposium 2025 organizers and speakers

Date **October 27 (Mon), 2025**
13:30 ~ 17:15
Hybrid (In-Person and Online)

Venue **Hitotsubashi Hall National Center of Sciences Building 2F**
2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8439

13:30～ **Opening**

13:40～ **Session I: Food systems transformation – Stocktaking initiatives and achievements since 2021**
Keynote 1: Food Systems Transformation in the Post-UNFSS+4: Achievements and Opportunities for Science-Driven Decision Making
Dr. Stefanos Fotiou, Director UN Food Systems Coordination Hub
Keynote 2: ASEAN Cooperation on Food, Agriculture and Forestry (FAF): Implementing the FAF Sectoral Plan 2026–2030
Dr. Pham Quang Minh, Head of Food, Agriculture and Forestry Division of the ASEAN Secretariat
Keynote 3: ASEAN-Japan MIDORI Cooperation Plan (Revised in 2025)
Dr. HAGIWARA Hideki, Counsellor (Deputy Director-General for Environment, Export and International Affairs Bureau), Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan
Accelerating Application of Agricultural, Forestry, and Fisheries Technologies in the Asia- Monsoon Region: Strategic Dissemination through the Green Asia Project,
Dr. FUNAKI Yasuro, Green Asia Project Leader, JIRCAS

15:00～ **Session II: Showcasing and networking - Technology Catalog**
Scientists (JIRCAS, NARO, FRA, FFPRI, AIST, and leading universities) will present their technologies listed in Catalog to the participants in poster-presentation style.

15:45～ **Session III: Introduction of Efforts toward Food Systems Transformation by the International Science Advisory Board members**
Dr. Mohamad Zabawi bin Abdul Ghani, Malaysian Agricultural Research and Development Institute (MARDI)
Dr. Phisamai Srichayet, Institute of Food Research and Product Development (IFRPD), Kasetsart University
Dr. Fadjry Djufry, Indonesian Agency for Agricultural Engineering and Modernization (BRMP)

16:15～ **Panel Discussion and Q&A**

17:10～ **Closing**

JIRCAS 国際農研

Session 1: Food Systems Transformation – Stocktaking Initiatives and Achievements Since 2021

In Session I, the audience learned about the stocktaking of food systems transformation from Dr. Fotiou of the UN Food Systems Coordination Hub (global level), Dr. Minh of the ASEAN Secretariat (regional level), and Dr. Hagiwara of MAFF and Dr. Funaki of JIRCAS (local levels).

The Role of Science and Technology for Food Systems Transformation / Dr. Stefanos Fotiou (Director of the UN Food Systems Coordination Hub)

"Science demands action," stated the UN Secretary-General at the opening of the 2025 Climate Summit. Yet, despite decades of evidence on the consequences of climate change for human health and well-being, coordinated efforts contesting scientific consensus are on the rise. As the 2030 Agenda deadline approaches, progress toward the Sustainable Development Goals (SDGs) is faltering, while the world faces overlapping crises that threaten to breach planetary boundaries at irreversible levels and undermine food, health, and environmental security.

One central challenge is how to translate the growing body of knowledge into actionable policy. Food systems exemplify global paradoxes: the rising cost of healthy diets alongside increasing child obesity; regions that feed the world yet struggle to nourish their own populations; and Africa's mounting food import bill even as half of the continent's fertile land remains underutilized. In Latin America and the Caribbean, the cost of a healthy diet remains the highest among global regions. These dynamics demonstrate both the urgency and the opportunity of food systems transformation.

This presentation shares opportunities arising from the UN Secretary-General's Call to Action at the UN Food Systems Summit Stocktaking Moment 2025 (UNFSS+4), showcasing how science must be supported to achieve sustainable and just food futures. Aligned with Japan's priorities, three areas are particularly science-intensive and globally relevant: (i) the decarbonization of agriculture through biofertilizers, precision farming, and soil microbiome research; (ii) innovation in digital and smart farming, including robotics and artificial intelligence, to offset labor constraints and enhance efficiency; and (iii) responsible fisheries resource management, leveraging biotechnology and ecological science to secure healthy diets and reduce environmental pressure. By addressing these domains and confronting power asymmetries that hinder implementation, the UN Food Systems Coordination Hub and its Science cluster can enable over 150 countries to make knowledge-based decisions in the food–environment–health nexus, contributing to intergenerational well-being and global stability.

Dr. Stefanos Fotiou
(Director, UN Food Systems Coordination Hub)

ASEAN Cooperation on Food, Agriculture and Forestry (FAF): Implementing the FAF Sectoral Plan 2026–2030 / Dr. Pham Quang Minh Assistant Director and Head of the Food, Agriculture and Forestry Division of the ASEAN Secretariat

ASEAN cooperation in food, agriculture, and forestry (FAF) has been a cornerstone of regional development since 1968. Initially focused on food production and supply, cooperation has progressively expanded to encompass food security, food safety, crops,

livestock, fisheries, forestry, agricultural training, cooperatives, and product promotion. This work is guided by the ASEAN Ministers on Agriculture and Forestry (AMAF) and coordinated through the Senior Officials Meeting (SOM-AMAF), supported by specialized working groups and sub-groups.

Building on the FAF Sectoral Plan (SP-FAF) 2016–2025, which emphasized competitiveness, sustainability, and resilience, the SP-FAF 2026–2030 introduces a forward-looking vision: a sustainable, inclusive, resilient, and secure FAF sector in ASEAN. The Plan seeks to transform the sector toward sustainable and resilient development by supporting livelihoods, safeguarding the environment, enhancing food and nutrition security, promoting innovation, and strengthening ASEAN's role in global trade and cooperation to foster stronger regional collaboration, mainstream sustainable practices, and secure long-term benefits for present and future generations.

The Plan is anchored on six Strategic Thrusts (STs):

- Sustainable and Regenerative Measures
- Decarbonization and Climate Resilience
- Food Security and Nutrition
- Trade and Market Connectivity
- Partnerships, Cooperatives, and Digital Innovation
- Sustainable Forest Management

Implementation will be overseen by SOM-AMAF and its working groups, ensuring streamlined coordination, active stakeholder engagement, and adaptability to emerging challenges. Closely aligned with the ASEAN Economic Community (AEC) Strategic Plan 2026–2030, the SP-FAF reinforces ASEAN's integration goals while advancing a transformative agenda. Through this framework, ASEAN commits to a future-ready FAF sector that advances sustainability and resilience, ensures food and nutrition security, and delivers inclusive prosperity across the region.

Dr. Pham Quang Minh
(Head of Food, Agriculture and Forestry Division of the ASEAN Secretariat)

ASEAN-Japan MIDORI Cooperation Plan (Revised 2025) / Dr. HAGIWARA Hideki (Counsellor (Deputy Director-General for Environment, Export and International Affairs Bureau), MAFF, Japan)

Next, Dr. Hagiwara from MAFF gave a keynote speech on the theme of the ASEAN-Japan MIDORI Cooperation Plan (Revised 2025). As the effects of climate change caused by global warming become more serious and concerns about food security increase, building sustainable agriculture and food systems while improving productivity has become a common challenge for all countries.

Dr. Hagiwara emphasized that, while there is no universal, one-size-fits-all solution applicable worldwide, ASEAN and Japan share common regional characteristics: a hot and humid climate, an agricultural structure centered on rice farming, and a high proportion of small and medium-sized farms, which provide a strong foundation for collaboration across many fields. Based on this recognition, the "ASEAN-Japan MIDORI Cooperation Plan" was adopted in October 2023 as a Japanese cooperation initiative to build resilient and sustainable agriculture and food systems in the ASEAN region.

Then, Dr. Hagiwara introduced the revisions made to the plan in October 2025, two years after its adoption, which includes newly added projects focusing on: greenhouse gas (GHG) reduction technologies; actions for food security in the ASEAN region; social implementation of research institute achievements; and dissemination of smart agriculture technologies by private sectors.

Dr. HAGIWARA Hideki
(Counsellor (Deputy Director-General for Environment, Export and International Affairs Bureau), Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan)

Accelerating the Application of Agricultural, Forestry, and Fisheries Technologies in the Asia-Monsoon Region: Strategic Dissemination through the Green Asia Project / Dr. Funaki Yasuro (Director of the Social Sciences Division and Project Leader of the Green Asia Project, JIRCAS)

Following the keynote speech, Dr. Funaki, Director of the Social Sciences Division and Leader of the Green Asia Project, gave a presentation titled "Accelerating the Application of Agricultural, Forestry, and Fisheries Technologies in the Asia-Monsoon Region: Strategic Dissemination through the Green Asia Project." The Green Asia Project is a four-year project to accelerate the establishment of sustainable food systems by demonstrating Japanese agricultural technologies applicable to the Asia-Monsoon region and disseminating them on the ground. As this project concludes at the end of March 2026, the symposium reviewed its activities to date and introduced the lessons learned.

More specifically, this presentation explained that the Green Asia Project is structured around two interrelated pillars: (i) Establishing frameworks for international collaboration and disseminating information, and (ii) Accelerating the application of scalable agricultural technologies through joint research. It highlighted three key lessons: (1) the importance of consolidating technological information and disseminating it as an integrated source, along with the need for a hub function to support this; (2) the necessity of strengthening interfaces that connect science with policy; and (3) the importance of establishing strategic plans from the early stages of a project. These insights are expected not only to further promote the dissemination of Japanese technologies in the Asia-Monsoon region, but also to contribute to the application of such technologies in other Global South countries.

Dr. FUNAKI Yasuro
(Director of Social Sciences Division and Project Leader, Green Asia Project, JIRCAS)

IIYAMA Miyuki
Program Director (Information), JIRCAS

FUNAKI Yasuro
Director, Social Sciences Division and
Project Leader, Green Asia Project, JIRCAS

Session 2: Showcasing and Networking - Technology Catalog

Leaving the main hall, Session 2, organized as a poster session, was held in an environment conducive to dialogue among participants. The purpose was to leverage the diverse group of participants, who were all interested in food systems transformation, so they could learn about promising technologies that contribute to both production potential and sustainability and have opportunities for collaboration in implementing these technologies.

The posters in the session featured 44 technologies included in the "Technology Catalog Contributing to Production Potential and Sustainability in the Asia-Monsoon Region" Ver. 4.0 (Fig. 1), which was created and published by the Green Asia Project. Of these, 32 posters were directly explained by researchers who had developed them, and active exchanges of information and business cards took place among participants (Photo 1).

All technologies in the catalog were developed in Japan or through international collaborative research. They are expected to be applied in Southeast Asia or South Asia, which share characteristics like high temperatures and humidity. The development entities include diverse national institutes and universities. The technologies can be classified by target production sector as follows. Livestock: 4 technologies, Agriculture (excluding livestock): 29, Food processing: 2, Forestry: 3, Fisheries: 6. They can also be classified by sustainability area as follows. Greenhouse gas reduction: 12, Biomass utilization, Labor productivity enhancement, Resource management: 8 technologies each, Chemical pesticide reduction, Climate disaster mitigation: 6 technologies each (with some technologies expected to contribute to multiple areas).

In the session, participants from both inside and outside Japan gathered and engaged in active conversations with the developers. Among the participants were researchers, government officials, aid agency representatives, and embassy staff, raising expectations for future collaboration. While the session was generally well-attended, some posters that did not align with the symposium participants' interests saw fewer visitors and drew criticism of insufficient management from some developers. However, whether this session leads to future fruitful collaboration should not be determined solely by the number of visitors. This experience served as a precious opportunity to learn the importance of sharing this understanding with developers.

KOBAYASHI Shintaro
Senior Researcher, Social Sciences Division, JIRCAS

Fig. 1. The Technology Catalog
https://www.jircas.go.jp/en/greenasia/techcatalog

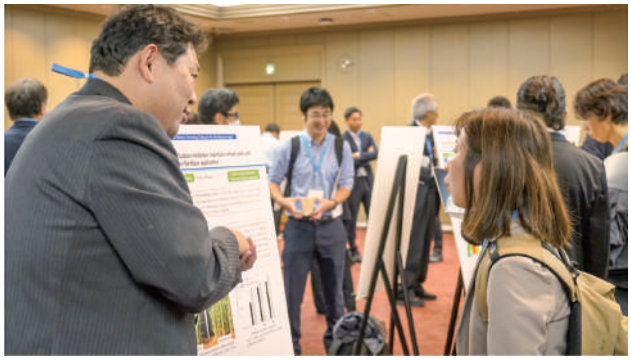


Photo 1. Scene at the poster session

Session 3: Introduction of Efforts toward Food Systems Transformation by the International Science Advisory Board

Building sustainable food systems is a shared challenge for all nations. In Session 3, we invited members from Asian countries of the International Scientific Advisory Board for Strategy “MIDORI” to introduce activities and efforts being made in their respective countries.

Dr. Mohamad Zabawi bin Abdul Ghani introduced the initiatives of the Malaysian Agricultural Research and Development Institute (MARDI), where he serves as Director. The overview is as follows.

MARDI plays a central role in the Malaysian government’s National Agrofood Policy 2.0 (2021–2030), conducting research and development not only to increase productivity but also to build resilience, preserve biodiversity, and ensure nutrition security. Its achievements can be categorized into two types: public goods technologies and commercial technologies. Recent achievements as public goods include new varieties (rice, shallots, coffee, and corn) that enhance yield, quality, and resilience; the expansion of gene banks; and the establishment of a traceability system for rice seed quality. Commercial technology achievements include a plant factory model, advanced smart and precision farming technologies for paddy fields, an aromatic low-glycemic index (GI) rice variety (MRQ 103), a biofertilizer that maintains paddy soil health, and a diagnostic kit for early detection of rice diseases. These technologies create real solutions for consumers and industry, driving both growth and sustainability. Looking ahead, significant challenges remain, including climate change, nutrition security, how to ensure that smallholders benefit from the digital revolution, and how to attract the younger generation to agriculture. Addressing these challenges requires strong partnerships. MARDI will continue collaborating with JIRCAS, the Japan International Cooperation Agency (JICA), the International Rice Research Institute (IRRI), the Food and Agriculture Organization of the United Nations (FAO), and others, and will contribute to the Association of Southeast Asian Nations (ASEAN) initiatives on sustainable agriculture and to South-South cooperation.

Subsequently, Dr. Phisamai Srichayet introduced the long-term efforts made by the Institute of Food Research and Product Development (IFRPD) at Kasetsart University in Thailand, where she is affiliated. The overview is as follows.

Thailand’s major agricultural products, including rice, fruit, chicken, and cassava, are seeing productivity improvements. Processing of the growing volume of agricultural products plays a key role in extending shelf life, reducing food loss, and ensuring sustainable use. To ensure quality and safety, agricultural product processing is conducted under strict standards. However, for small and medium-sized enterprises (SMEs) and farmers who engage in food processing, it is difficult to acquire the knowledge necessary to meet standards. Therefore, in addition to research and development, IFRPD works to transfer technology through consultations and training to support SMEs and farmers. It also provides food analysis and application support for registration with a government agency overseeing food safety. IFRPD’s technology transfer and support efforts over the past 50 years have continuously supported knowledge acquisition for innovation, promoting waste reduction and new product development. Government agencies play an important role in promoting this kind of sustainable learning and innovation

KOBAYASHI Shintaro
Senior Researcher, Social Sciences Division, JIRCAS

Dr. Mohamad Zabawi bin Abdul Ghani
(Malaysian Agricultural Research and Development Institute (MARDI))

Dr. Phisamai Srichayet
(Institute of Food Research and Product Development (IFRPD), Kasetsart University)

Panel Discussion and Q&A

The panel discussion, chaired by JIRCAS Information Program Director IIYAMA Miyuki, featured members of the International Scientific Advisory Board, including Prof. Shenggen Fan (Professor, China Agricultural University), Dr. Jacqueline Hughes (Secretary General, World Agriculture Forum; online), Prof. Joachim von Braun (Professor, Bonn University; online), and Dr. Jean Balié (Special Advisor to FAO; video message). The panel also included keynote speakers Dr. Fotiou (UN Food Systems Coordination Hub) and Dr. Minh (ASEAN Secretariat), as well as Mr. NOZAWA Satoshi (International Research Officer, Agriculture, Forestry and Fisheries Research Council Secretariat), Dr. SAITO Kazuki (Senior Researcher, International Rice Research Institute (IRRI)), and Dr. HAYASHI Keiichi (Environment Program Director, JIRCAS).

1: Lessons from Green Asia and Recommendations for a Post-Green Asia Era

The moderator first asked the members of the International Scientific Advisory Board, who have advised the Green Asia Project, to share their views on the lessons learned from its outcomes and future lessons in the global context of accelerating food system transformation. The members praised the project for systematizing sustainable agricultural technologies developed in Japan, selecting and demonstrating those currently in the application stage, and widely disseminating information on enabling conditions for social implementation. They also described it as a "groundbreaking initiative aimed at transforming food systems" and a model from which other countries and regions can learn from.

For future directions, Dr. Fan suggested strengthening collaboration with international organizations such as the CGIAR and expanding activities into the nutrition field. Dr. Hughes recommended assessing beneficiary needs, analyzing risks and trade-offs, and monitoring the path to social implementation. Prof. von Braun stressed leveraging the synergies of multiple technologies, strategically partnering with private sector innovations, and securing financing for sustainable social implementation. Dr. Balié, referring to the success of the Technology Catalog, emphasized the importance of recognizing innovation in institutions, policies, and governance.

In response to the committee members' comments, Dr. Fotiou praised Green Asia for its grounded activities, its alignment with global food system transformation efforts, and its policy-science interface with policy legitimacy presented at intergovernmental forums such as ASEAN, UNFSS, and COP. Dr. Minh emphasized the importance of coordination between diverse stakeholders—governments, the private sector, researchers, farmers, and youth—and proposed JIRCAS's participation in the ASEAN Working Group.

Mr. Nozawa noted that the Basic Plan for Food, Agriculture and Rural Areas emphasized the importance of international agricultural research, thus expecting contributions from JIRCAS and partners to collaborate with ASEAN/CGIAR in the development and implementation of technologies addressing food security and climate change in the Asia-Monsoon region and beyond. JIRCAS Environment Program Director Dr. Hayashi introduced upcoming scalable technologies that JIRCAS could deploy in the future, while stressing that collaboration with partners, such as international organizations, is essential for social implementation on the ground. Dr. Saito mentioned the MAFF and IRRI collaborative project on sustainable rice farming systems and stated that IRRI can play a complementary and catalytic role in Japan's technical cooperation in Asia and Africa. He also encouraged young Japanese researchers to work at international organizations.

2: Recommendations for Promoting Social Implementation

The moderator then asked the panelists about enabling conditions to accelerate social implementation, particularly institutional innovations. The panelists suggested the necessity of addressing the concerns of beneficiaries (farmers, local communities, etc.), the consideration of institutional aspects, and the establishment of coordination mechanisms to further strengthen collaboration with international organizations and the private sector. For example, Dr. Hughes and Dr. Saito emphasized the need to co-design scalable technologies with beneficiaries; Prof. von Braun mentioned institutional innovation theory, which argues that scarcity and relative prices

accompany endogenous institutional change; Mr. Nozawa called attention to the importance of collaboration between research institutes and private companies; Dr. Fan encouraged professional services using AI and cutting-edge biotechnology to overcome the constraints of small land sizes; Dr. Minh underscored the importance of harmonizing standards for promoting sustainable agricultural technologies; and Dr. Fotiou highlighted the need for creative disruption to break down constraints posed by vested interests.

3: Summary of Discussion

The moderator acknowledged the great contributions of collaborators, including the Advisory Board Members, MAFF, various research institutes and universities in Japan and the Asia-Monsoon region, as well as expanded collaboration with the ASEAN Secretariat and the UN Food Systems Coordination Hub, all of which have contributed to improving approaches in the Green Asia Project at the science-policy interface. In response to the panel's opinions, future efforts should clarify the needs of target beneficiaries and focus on addressing socio-economic and institutional considerations regarding technology adoption. She concluded the session by expressing her hope that Green Asia's experience would serve as a bridge to future efforts.

Panelists and moderator on stage

IIYAMA Miyuki
Program Director (Information), JIRCAS

JIRCAS TODAY

【Research Highlights】

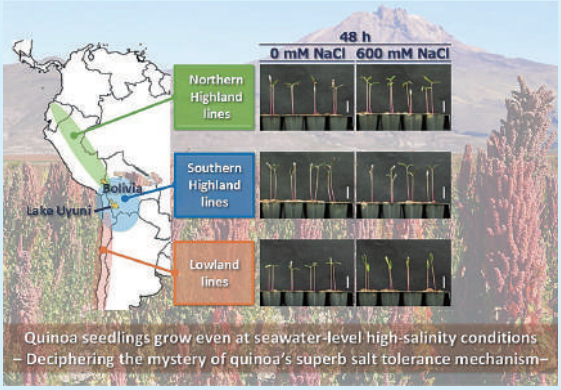
Partial Elucidation of the Salt Excretion Mechanism in the Super Crop "Quinoa" —Paving the Way for Developing Salt-Tolerant Crops—

JIRCAS, in collaboration with Nagoya University, RIKEN, and Kyoto University, has clarified part of the mechanism by which quinoa, a crop with high salt tolerance, excretes salt. Quinoa is a superfood attracting global attention due to its excellent nutritional balance and ability to grow in harsh environments.

In this study, it was shown that young quinoa plants possess strong salt tolerance, allowing them to grow even under high salt concentrations equivalent to seawater, conditions under which many other plants cannot survive.

The research also revealed that sodium accumulation in the aerial parts differs by regional lineage. Notably, the southern highland varieties grown in the high-salinity soils near the Uyuni Salt Flats in Bolivia absorbed less salt into their aerial parts than varieties from other regions. This suggests they may have evolved mechanisms to limit salt uptake above ground.

Furthermore, three sodium transporters were identified as functioning in quinoa's salt excretion process. These findings open the door to utilizing quinoa's mechanisms for breeding or engineering crops resistant to salt damage.



This research was published in the online edition of *Frontiers in Plant Science* on June 18, 2025 (Japan time) as an open-access article.

JIRCAS TODAY

The 2025 Japan International Award for Young Agricultural Researchers (The 19th Japan Award)

About the Japan Award

Established in 2007, the Japan International Award for Young Agricultural Researchers (Japan Award) has been organized and presented jointly by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Japan International Research Center for Agricultural Sciences (JIRCAS). The award honors foreign researchers whose outstanding achievements contribute to research and development in agriculture, forestry, fisheries, and related industries in developing regions, and aims to further motivate them in their work.

Up to three young researchers under age 40 (as of January 1st, award year) who have shown (1) outstanding performance in research and development in agriculture, forestry, fisheries, or related industries in developing regions and (2) outstanding achievements in research and development that will lead to future technological innovation in agriculture, forestry, fisheries, or related industries in developing regions are invited yearly to Japan to receive certificates of commendation from the Chairman of the Agriculture, Forestry and Fisheries Research Council.

The 2025 (19th) Japan Award ceremony took place on Monday, October 27th, at Hitotsubashi Hall, Hitotsubashi University, Tokyo.

The 2025 (19th) Japan Award Winners

◆**Vignesh MUTHUSAMY**
Age*,Gender, Nationality: 38, Male, Indian
Institute: Indian Agricultural Research Institute
Research Achievement: Genetic biofortification and dissemination of Indian maize hybrids for enhanced nutritional security

◆ **Ivan Eduardo RAMIREZ MORALES**
Age*,Gender, Nationality: 39, Male, Ecuadorian
Institute: Universidad Técnica de Machala
Research Achievement: Research on artificial intelligence in agriculture, aquaculture and livestock production and its international application and deployment

◆ **Addisu Fekadu ANDETA**
Age*,Gender, Nationality: 38, Male, Ethiopian
Institute: Arba Minch University
Research Achievement: Research on innovative enset processing and fermentation technologies and its deployment in five regions of Ethiopia

(*Ages are as of January 1, 2025.)

JIRCAS Mail Magazine (English) Registration Guidance

JIRCAS Mail Magazine, the online quarterly publication of JIRCAS, provides information on the latest topics, events, seminars and workshops, as well as new technologies, research highlights, and guidance publications. To subscribe online, please use the following link. Thank you very much.
https://www.jircas.go.jp/en/public_relations/jircas_mailmagazine

JIRCAS Newsletter No.101

https://www.jircas.go.jp/

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