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Special Feature

JIRCAS International Symposium 2024

Resilient Genetic Resources for Food Security in the Era of Global Boiling

Japan International Research Center For Agricultural Sciences

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Special Feature

JIRCAS International Symposium 2024

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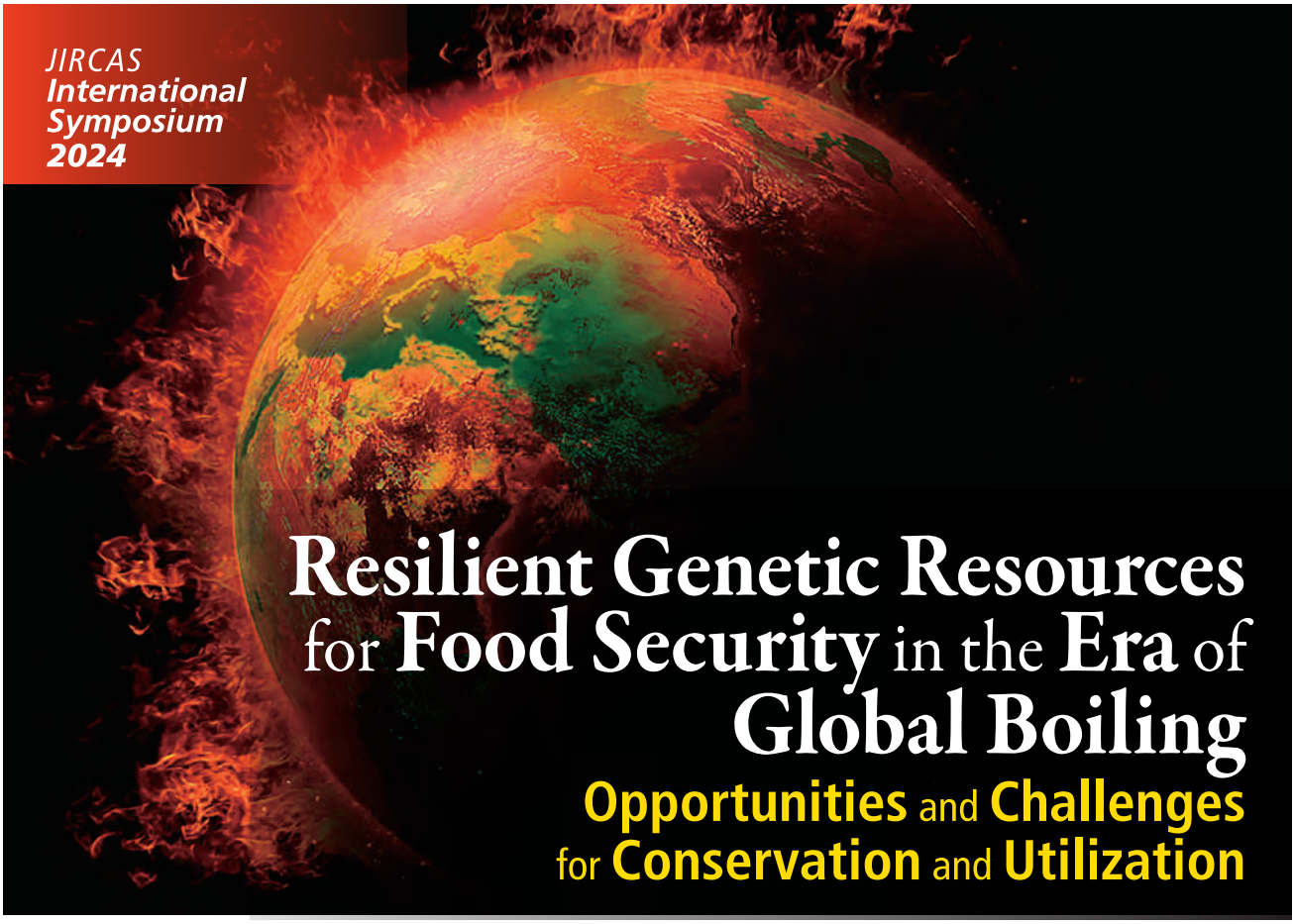


Date **November 22 (Fri), 2024**
13:30-17:30 Hybrid format (On-site × Online)

Venue **U Thant International Conference Hall**
United Nations University, Tokyo

Time	Slot			Speakers
13:30 ~	Opening Ceremony			
13:40 ~ 14:40	Keynote Speech 1		Historical Perspectives on the Role of Crop Diversity in Achieving Food and Nutrition Security	Sarada Krishnan Director of Programs, Global Crop Diversity Trust
	Keynote Speech 2		Adapting Food Systems to a Changing Climate	Toshihiro Hasegawa Executive Scientist, Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization (NARO)
14:40 ~ 15:40	Session1	Potentials of Genetic Resource Diversity for Resilient and Nutritious Food Systems		
		1-1	Potential of Quinoa for Food and Nutritious Security Under Climate Change in the Era of Global Boiling	Yukari Nagatoshi Project Leader, Biological Resources and Post-harvest Division, JIRCAS
		1-2	Further Potential of Sago Palm and Sago Starch in Shaping the Future of the Asia-Pacific Region	Hiroshi Ehara Professor, Graduate School of Bioagricultural Sciences, Nagoya University
		1-3	Discovery of Genes for Stress Resistance in Mungbean (*Vigna radiata*)	Prakit Somta Associate Professor, Kasetsart University
15:40 ~ 15:50	Coffee Break			
15:50 ~ 16:50	Session 2	Opportunities of Utilizing Genetic Resources to Build Resilient Food Systems		
		2-1	IRRI's Strategies to Utilize Genetic Resources for Breeding Resilient Rice	Venuprasad Ramaiah Research Unit Leader, International Rice Research Institute (IRRI)
		2-2	Diving into Genetic Diversity in Wild Wheats: A Case Study on *Aegilops tauschii* Coss	Yoshihiro Matsuoka Professor, Graduate School of Agricultural Science, Kobe University
		2-3	Advancement of Tropical Crop Genetic Resources Utilization through the Development of Database, Technologies and Research Networking	Shinsuke Yamanaka Director of Tropical Agriculture Research Front and Project Leader, JIRCAS
16:50 ~ 17:25	Panel Discussion			Panel Chair: Yasunari Fujita Program Director / Food, JIRCAS
17:25 ~ 17:30	Closing			

JIRCAS International Symposium 2024 Report

The JIRCAS International Symposium 2024 titled "Resilient Genetic Resources for Food Security in the Era of Global Boiling – Opportunities and Challenges for Conservation and Utilization" was held on Friday, November 22, 2024, at the U Thant Conference Hall of the United Nations University in Shibuya-ku, Tokyo. The hybrid event, supported by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the National Agriculture and Food Research Organization (NARO), featured simultaneous interpretation in Japanese and English and online viewing, attracting 180 participants (81 in person, 99 online).

In his opening remarks, Mr. Osamu Koyama, President of JIRCAS, emphasized the urgent need to conserve and utilize genetic resources to develop sustainable and resilient crops as the effects of climate change become more severe and food security becomes a greater concern in the era of global warming. In his welcoming speech, Mr. Teruya Sakaida, Director-General of the Agriculture, Forestry and Fisheries Research Council Secretariat, MAFF, highlighted MAFF's initiatives based on the "Green Food System Strategy" and the revised "Basic Law on Food, Agriculture and Rural Areas" that was enacted in May, stressing the importance of achieving resilient and sustainable agricultural production to promote food security.

In her keynote address, Dr. Sarada Krishnan, Director of Programs at Global Crop Diversity Trust, gave a presentation titled "Historical Perspectives on the Role of Crop Diversity in Achieving Food and Nutrition Security," focusing on the importance of genetic resources conservation. Following this, Dr. Toshihiro Hasegawa, Executive Scientist at the Institute for Agro-Environmental Sciences, NARO, presented "Adapting Food Systems to a Changing Climate," addressing strategies for responding to the challenges of climate change.

In Session 1, "Potentials of Genetic Resource Diversity for Resilient and Nutritious Food Systems," based on research results for underutilized crops, Dr. Yukari Nagayoshi, Project Leader at JIRCAS; Dr. Hiroshi Ehara, Professor in the Graduate School of Bioagricultural Sciences at Nagoya University; and Dr. Prakit Somta, Associate Professor in the Faculty of Agriculture at Kasetsart University, gave presentations on quinoa, sago palm, and mung bean, respectively.

In Session 2, "Opportunities of Utilizing Genetic Resources to Build Resilient Food Systems," based on research results for major and other crops, Dr. Venuprasad Ramaiah, Research Unit Leader at the International Rice Research Institute; Dr. Yoshihiro Matsuoka, Professor in the Graduate School of Agricultural Science at Kobe University;

Mr. Osamu Koyama (President, JIRCAS)

Panel Discussion

and Dr. Shinsuke Yamanaka, Director of Tropical Agriculture Research Front (TARF) and Project Leader at JIRCAS, made presentations on rice, wheat, and TARF initiatives, respectively.

During the panel discussion, eight panelists, consisting of the keynote speakers and speakers from each session, were led by Dr. Yasunari Fujita, Program Director (Food) at JIRCAS. They discussed the importance of conserving and utilizing genetic resources and strengthening international cooperation to build a resilient food system.

In closing, Dr. Seiji Yanagihara, Vice-President of JIRCAS, emphasized the importance of international collaborative research to further promote the conservation and utilization of genetic resources for the development of a robust food system. He thanked all participants and officially concluded the event.

Yasunari Fujita
Program Director (Food), JIRCAS
Miyuki Iiyama
Program Director (Information), JIRCAS

Group photo of JIRCAS International Symposium 2024 organizers and speakers

Keynote Speech 1
Historical Perspectives on the Role of Crop Diversity in Achieving Food and Nutrition Security

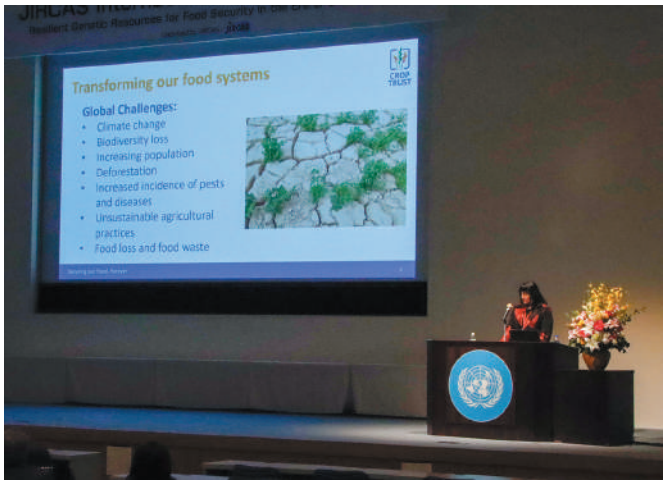
The first keynote speaker, Dr. Sarada Krishnan, Director of Programs at Global Crop Diversity Trust, gave a lecture titled “Historical Perspectives on the Role of Crop Diversity in Achieving Food and Nutritional Security.”

Diversity within and among domesticated species has been the cornerstone of agricultural development. However, the globalization of agriculture and plant breeding has led to the loss of genetic diversity in farmers’ fields, causing genetic erosion and resulting in the loss of adaptive traits that may confer climate resilience or resistance to pests and diseases. For example, in the US, at least 90% of vegetable varieties have been lost since 1903, while in Europe, only six apple varieties are the source of commercial production today. Furthermore, our food systems are facing the challenges of climate change, which can lead to significant loss of yield, resulting in global food insecurity without the reserve of diverse genetic resources.

To deal with these global challenges, we need to conserve crop diversity for use by current and future generations, both directly by farmers and as the raw materials for research and plant breeding. Dr. Krishnan retrospectively reviewed the key figures and milestones in the history of crop diversity conservation. Nikolai Vavilov’s crop biogeography work provided a theoretical basis for the relationship between a crop’s center of origin and the amount of genetic variation it displayed. Otto H. Frankel was central to the efforts to organize genetic conservation from the 1960s onwards, including a network of regional genebanks which eventually led to the formation of the Consultative Group on International Agricultural Research, which we now know as CGIAR. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) provides a policy framework for the world’s genebanks. The Global Crop Diversity Trust is an essential element of the funding strategy of the ITPGRFA and is raising an endowment to support the essential operations of key genebanks around the world.

Looking forward, Dr. Krishnan emphasized the need to identify gaps in existing crop collections and expand collecting and conservation efforts to secure crop diversity. Recently, there has been a lot of interest and push to promote nutritious and underutilized crops, also known as opportunity crops, including the US Department of State-led initiative called the Vision for Adapted Crops and Soils (VACS). To accelerate the conservation of crop diversity for food systems transformation, she called for a range of actions, including: characterizing important traits related to climate change resilience and nutrition; developing public-private partnerships; enabling the adoption of opportunity crops by farmers and consumers through addressing socio-economic obstacles; providing seed systems and extension services to farmers; developing enabling policies and regulations that support diverse food systems by working with national governments and international policy frameworks (such as the Plant Treaty and the Convention on Biological Diversity (CBD)); and raising awareness among broad stakeholders.

Miyuki Iiyama
Program Director (Information), JIRCAS



Keynote speech

Dr. Sarada Krishnan
(Director of Programs, Global Crop Diversity Trust, Bonn, Germany)

Keynote Speech 2
Adapting Food Systems to a Changing Climate

The second keynote speaker, Dr. Toshihiro Hasegawa, Executive Scientist at the Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization (NARO), spoke about the key messages of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) on climate change impacts, adaptation, and vulnerability, based on his work as an author of the report. He also outlined strategies for using genetic resources to enhance the resilience of food systems in the face of climate change.

In 2022, the IPCC released AR6 to provide policy-relevant information. Chapter 5 of this report comprehensively addresses climate change impacts, projected risks, and adaptation measures for food, fiber, and other eco-products. The report highlights the negative and significant impacts of human-induced climate change, including extreme weather events, on food systems. It describes how these impacts have caused changes in suitable growing areas, reduced productivity, lowered quality, and raised food prices, thereby increasing the risk of resource conflicts and malnutrition. These impacts are expected to cause severe food insecurity and livelihood deterioration in many parts of the world, and adaptation measures are required.

Effective adaptation approaches, including improved cultivars, agroforestry, land use diversification, and strengthening biodiversity, are being addressed and can enhance food production while providing many benefits, such as improved yields and ecosystem stability. Sustainable management of resources in response to changes in species distributions due to climate change can be an effective adaptation measure to reduce risks to food security, nutrition, and health. However, as global warming becomes more severe, it is clear that available genetic resources and improved cultivars will be limited, and food security risks will be even greater in vulnerable areas.

In order to minimize the impacts of climate change on the food system and the ecosystems that support it, significant mitigation efforts will be required. There is an urgent need to increase the sustainability of food production and reduce vulnerability as a means of adaptation.

Shinsuke Yamanaka
Director, Tropical Agriculture Research Front, JIRCAS

Keynote speech


Dr. Toshihiro Hasegawa
(Executive Scientist, Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization)

Session 1
Potentials of Genetic Resource Diversity for Resilient and Nutritious Food Systems

In this session, three researchers spoke about the potential of plant species such as quinoa (*Chenopodium quinoa*), sago palm (*Metroxylon sagu*), and mung bean (*Vigna radiata*), which have excellent nutritional properties as well as climate resilience, in enhancing food and nutrition systems under climate change.

First, Dr. Yukari Nagatoshi, Project Leader in the Biological Resources and Post-harvest Division at JIRCAS, gave a lecture titled "Potential of Quinoa for Food and Nutritious Security Under Climate Change in the Era of Global Boiling." Quinoa, also known as a "superfood," is characterized not only by the high nutritional value of its seeds but also by the high environmental adaptability of the quinoa plant. Quinoa has been cultivated in the Andean region of South America for about 7,500 years, but its cultivation was historically banned by Spanish conquistadors in the 16th century. As a result, the development of quinoa varieties and cultivation techniques has lagged far behind for about 500 years. JIRCAS has focused on quinoa as a new major crop candidate for the next generation of the world and is promoting research and development to accelerate the breeding of quinoa through cutting-edge plant science research. In this presentation, details of the genome sequencing of representative quinoa lines for efficient genome breeding of quinoa, the maintenance and analysis of approximately 200 quinoa lines covering the quinoa-growing regions of South America, and the development of technology to elucidate quinoa gene functions using virus vector methods were reported. She also introduced the development of breeding materials using these findings and technologies for the generation of breeding populations and genome-wide genotyping, as well as the latest quinoa salt stress response mechanisms. Through collaborative research with research institutions in Japan and Bolivia, it is expected that the diversity and potential of quinoa will be fully exploited to develop new crops and contribute to food and nutrition security in the future.

Next, Dr. Hiroshi Ehara, Professor in the Graduate School of Bioagricultural Sciences at Nagoya University, gave a lecture titled "Further Potential of Sago Palm and Sago Starch in Shaping the Future of the Asia-Pacific Region." Sago palm is a starch-producing plant distributed throughout Southeast Asia and Melanesia. It is gaining attention not only as a food source but also as a raw material for biofuels and other industrial applications. In addition, *Metroxylon* palms, including sago palms and related species, are an essential biological resource for promoting sustainable agriculture and rural development in tropical wetlands because they grow in wetlands, alluvial soils, and peat soils where few other major crops can grow without drainage and soil improvement. Recently, demand for sago palm has increased, driven by new social norms and sustainable development goals (SDGs) that emerged after the COVID-19 pandemic. However, sago palms are still underutilized as they are mainly harvested from natural forests and semi-cultivated with minimal care. This lecture introduced international activities aimed at promoting the SDGs through collaboration between sago palm-producing countries and

Session Chair: Dr. Miyuki Iiyama
(Program Director for Information, JIRCAS)

Dr. Yukari Nagatoshi
(Project Leader, Biological Resources and Post-harvest Division, JIRCAS)

Japan, the world's largest consumer of sago starch. In addition to the latest research on the tolerance mechanisms of sago palm to various environmental stresses, such as flooding stress, salt stress, and acid soil, new processing technologies using sago starch and examples of its use in food products were also presented. Through these activities, further possibilities for sago palm and sago starch in the future of the Asia-Pacific region are expected, such as strengthening food security and combating climate change through the expansion of sago palm production.

The last speaker in this session was Dr. Prakit Somta, Associate Professor in the Department of Agronomy, Faculty of Agriculture at Kasetsart University [Kamphaeng Saen Campus], who spoke on the "Discovery of Genes for Stress Resistance in Mungbean (*Vigna radiata*)." Mung bean is a legume crop of great socio-economic importance in Asia. It is often grown in rotation with rice, maize, wheat, and other cereals and has a very short growing season of 60–75 days. However, biotic and abiotic stresses such as pathogens and salt damage have resulted in low yield of mungbean. As environmental stresses worsen due to recent climate change, mung bean yields are expected to decline further. Marker breeding and genomics breeding are promising approaches to efficiently and rapidly develop new crop varieties with improved yield, quality, and resilience to biotic and abiotic stresses. Mung bean was one of the first legume crops to be subjected to genomics research 30 years ago, but genomics research has been slow due to lack of genomic resources. In this talk, the speaker reported on the consistent and ongoing efforts in genomics and molecular breeding of mung bean and the recent results revealed by high-resolution mapping and genome-wide association studies. The identification of quantitative trait loci (QTL) and candidate genes controlling bruchid infection resistance, powdery mildew disease resistance, cercospora leaf spot disease resistance, yellow mosaic disease resistance, calcareous soil tolerance, and salt tolerance has led to the development of useful markers, which are being utilized to develop stress-tolerant mung bean cultivars.

Yukari Nagatoshi
Biological Resources and Post-harvest Division, JIRCAS

Dr. Hiroshi Ehara
(Professor, Graduate School of Bioagricultural Sciences, Nagoya University)

Dr. Prakit Somta
(Associate Professor, Kasetsart University)

Session 2
Opportunities of Utilizing Genetic Resources to Build Resilient Food Systems

This session focused on the potential of climate-resilient food crop genetic resources and underutilized plant species (neglected and underutilized species (NUS)) to build resilient food systems. Three experts from an international organization, a university, and a national institute gave lectures on the use of genetic resources to build a resilient food system.

The first talk, "IRRI's Strategies to Utilize Genetic Resources for Breeding Resilient Rice," was given by Dr. Venuprasad Ramaiah, Research Unit Leader at the International Rice Research Institute (IRRI). The challenge for gene banks around the world is that they are underutilized; for example, IRRI's International Rice Genebank (IRG) holds 132,000 rice germplasm resources, but only 5% of them are actively used in breeding programs. Efficient utilization of existing genetic resources must be accelerated to address climate change. The role of gene banks is not only to conserve genetic diversity but also to provide information on important genetic traits to promote the use of genetic resources. However, this work is done exclusively by hand and is therefore extremely time-consuming and costly. In his presentation, he outlined IRRI's strategic approach to promoting the use of genetic resources, focusing on three areas of contention. These are: efforts to find important traits in IRG's collection of rare genetic resources that have never been used for breeding and to use them as climate-resilient breeding material; strategies for the interaction of genetic resources and the environment with exotic genetic resources and the use of breeding results; and the use of AI to promote the use of genetic resources in the breeding process. He presented an overview of the progress, opportunities, and challenges of IRG activities.

The next speaker, Dr. Yoshihiro Matsuoka, Professor in the Graduate School of Agricultural Science at Kobe University, gave a lecture titled "Diving into Genetic Diversity in Wild Wheats: A Case Study on *Aegilops tauschii* Coss." *Aegilops tauschii* Coss is a diploid wild wheat species that is widely native to central Eurasia. *Ae. tauschii* is a D-genome ancestor of bread wheat, which is adapted to diverse local environments and shows high phenotypic variation. Research on genetic mechanisms related to natural trait variation patterns of *Ae. tauschii* will enable the application of *Ae. tauschii* to agricultural crops. *Ae. tauschii* consists of two large lineages (TauL1 and TauL2) and one small lineage (TauL3), which are defined by accession similarities in nuclear and chloroplast molecular marker genotypes. Natural variation patterns for these lines showed that TauL2 and TauL3 are more sensitive to salt at germination and seedling stages compared to TauL1, and some TauL2 lines from the southern Caspian region are highly susceptible to hybridization with durum wheat in terms of anther size and hybridization potential. This was shown to be true for several TauL2 lines in the southern Caspian region. In addition, population structure analysis with over 500 accessions revealed a small number of previously unknown TauL3 accessions from Azerbaijan and northern Iran. Classification of thousands of anther images using machine learning approaches enabled genotypic discrimination to determine to which lineage the *Ae. tauschii* accessions belong.

Session Chair: Dr. Keiichi Hayashi
(Program Director for Environment, JIRCAS)

Dr. Venuprasad Ramaiah
(Research Unit Leader, International Rice Research Institute)

The last speaker in this session was Dr. Shinsuke Yamanaka, Director of the Tropical Agriculture Research Front (TARF) and Project Leader at JIRCAS, who spoke on the "Advancement of Tropical Crop Genetic Resources Utilization through the Development of Databases, Technologies, and Research Networking." TARF, JIRCAS's sole substation located in Ishigaki City, Okinawa, has a wide variety of genetic resources, including sugarcane, indica rice, tropical fruit trees, and forage grasses. These genetic sources are important locally for fuel production, calorie and nutrient sources, cash crops, and livestock feed. Research on these crops at TARF, under a subtropical environment, can contribute to climate change measures in the Southwest Islands in Japan and tropical islands in developing regions. TARF's on-going project on tropical fruit trees has developed strategic genetic resource information, breeding techniques, varieties and breeding materials, cultivation techniques, and extension methods as solutions to national and international challenges. For example, a database on *Erianthus*, a perennial grass and weed species of wild sugarcane, and 62 mango varieties are available on JIRCAS's website. They are also developing materials for tropical rice varieties that are tolerant to high-temperature sterility and drought stress as a response to ongoing climate change, and for varieties tolerant to biotic and abiotic stresses such as salt damage, acid soil, and pests and diseases for stable food production. Regarding tropical grasses and sugarcane, they have developed "Isan," a forage grass variety for Asia, and "DOA Khon Kaen 4," a new sugarcane variety, in collaboration with a research institute in Thailand. These have been adopted in Thailand as locally recommended varieties. In this way, they are working to promote the utilization of genetic resources such as tropical crops through the provision of information, research and development in line with local needs, and joint research with domestic and overseas research institutions.

Keiichi Hayashi
Program Director (Environment), JIRCAS

Dr. Yoshihiro Matsuoka
(Professor, Graduate School of Agricultural Science, Kobe University)

Dr. Shinsuke Yamanaka
(Director of Tropical Agriculture Research Front (TARF) and Project Leader, JIRCAS)

Panel Discussion
Proposals for the Conservation and Utilization of Genetic Resources in the Era of Global Boiling

The panel discussion, moderated by Dr. Yasunari Fujita, Program Director (Food) at JIRCAS, and featuring eight keynote and session speakers, focused on the conservation and use of genetic resources for building a resilient food system.

1: What is needed to unlock the potential of resilient non-major crops?

The moderator asked the panelists questions from the perspective of "unlocking the potential of resilient non-major crops." In response, Dr. Krishnan emphasized the importance of initiatives to conserve and utilize genetic resources, such as the U.S. Department of State's Vision for Adapted Crops and Soils (VACS) initiative. Dr. Nagatoshi mentioned the possibility that research on quinoa, which is highly nutritious and resistant to harsh environments, could not only provide a roadmap for the development of underutilized crops, but also contribute to strengthening the stress tolerance of major crops. Dr. Ehara mentioned the need for policy support as well as technological innovation, such as improving the efficiency of starch extraction and recycling the residue, to realize the potential of sago palm. Dr. Somta pointed out the importance of strengthening collaboration between breeders and molecular biologists, in addition to using molecular tools and genomic resources based on diverse genetic resources. In this way, it was suggested that to unlock the potential of resilient non-major crops, it is important to create a policy framework and strengthen interdisciplinary collaboration, in addition to promoting cutting-edge research.

2: Strengthening the resilience of major crops

The moderator asked the panelists questions from the perspective of "strengthening the resilience of major crops." Dr. Hasegawa emphasized that there is an urgent need for genetic improvement and innovative research on major crops to respond to climate change, and that a comprehensive approach is needed that integrates sustainable agricultural practices, resource management, and robust infrastructure. Dr. Matsuoka responded that there is a need to promote breeding using alleles of wheat relatives that have great potential, and Dr. Ramaiah mentioned that to promote the use of gene banks, there is a need to understand the needs, develop methods to regenerate wild species, provide relevant data, and expedite access to seeds. Dr. Yamanaka pointed out that the value of genetic resources currently held will increase as the handling of genetic resources becomes more strictly regulated under the Convention on Biological Diversity and other agreements. Thus, it was suggested that a comprehensive approach, including genetic improvement, is needed to strengthen the resilience of major crops, and that, in addition to the conservation and use of wild species and existing genetic resources, it is important to promote the use of gene banks.

3: Questions from the audience and summary

In the Q&A session, three panelists responded that in order to respond to climate change, which is expected to worsen, it is important to quickly transfer development technologies to farmers, make use of functional gene banks, and accelerate forward-looking breeding. In her closing message, keynote speaker Dr. Krishnan emphasized the need to ensure sufficient funding for gene banks to play an important role in preserving crop diversity. Dr. Hasegawa

Moderator: Dr. Yasunari Fujita
(Program Director for Food, JIRCAS)

Eight panelists take questions from the audience.

also stated that, looking ahead to the next decades, it is necessary to promote, through international cooperation, genetic resources research that emphasizes fair access to technology for small farmers and the involvement of local communities, and he concluded with the message that we must never give up the fight against climate change. In summary, the panel discussion reaffirmed the need to strengthen international and interdisciplinary research collaboration, with a focus on farmers and local communities, to conserve and utilize resilient genetic resources in the era of global boiling.

Yasunari Fujita
Program Director (Food), JIRCAS

The panelists

JIRCAS TODAY

【Research Highlights】

Tropical Forage Grass “Isan” Registered as a Variety in Thailand —The first Asian *Urochloa* variety developed for use in both Japan and Thailand—

JIRCAS, in collaboration with the Department of Livestock Development of the Ministry of Agriculture and Cooperatives of Thailand, the National Agriculture and Food Research Organization, the University of Miyazaki, and Okinawa Prefecture, has developed “Isan,” a tropical forage grass variety in the genus *Urochloa*, for Asia. “Isan” was registered as a variety in Japan in August 2021 and in Thailand in July 2024.

Urochloa (formerly known as *Brachiaria*) grasses are tropical grasses in the Poaceae family widely cultivated in tropical and subtropical regions around the world. They are known for their high yield, drought tolerance, suitability for grazing, high crude protein content, and excellent forage qualities. However, due to the relatively short history of crossbreeding in *Urochloa*, no varieties had been specifically developed for the Asia-Monsoon region.

In recent years, meat consumption has rapidly increased in Asia, leading to a rise in livestock numbers. This has created a demand for high-yield, high-quality, and low-cost tropical forage grass varieties that are suited to the Asian climate.

“Isan” is a tropical forage grass adapted to warm climates, characterized by its high content of plant-based protein and amino acids, as well as high yield. It reproduces through apomixis, a form of asexual reproduction that produces seeds without fertilization, making it easy to establish uniform pasturelands. As it is well-suited for low-cost grazing, the variety is expected to help stabilize farming operations and support the development of the livestock industry in Thailand.

Furthermore, as an adaptation strategy to recent global warming trends, “Isan” is expected to see expanded use in Japan, particularly in Nansei Islands and from Kyushu to Kanto regions.

‘Isan’ grass

JIRCAS TODAY

【2024 (The 18th) Japan International Award for Young Agricultural Researchers (Japan Award) and Commendation Ceremony】

About the Japan Award

The Japan International Award for Young Agricultural Researchers (Japan Award), established in 2007, is organized and presented by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan to honor young foreign researchers whose outstanding achievements promote research and development of agricultural, forestry, fishery, and other related industries in developing regions.

Up to three young researchers under age 40 (as of January 1st of the 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 2024 Japan Award ceremony was held on November 22 (Friday) at the U Thant International Conference Hall, United Nations University, Tokyo, Japan.

The 2024 (The 18th) Japan Award Winners

*Ages are as of January 1, 2024.

Elliott Ronald DOSSOU-YOVO
(37 years old, Male, Beninese)
Professional Affiliation: Africa Rice Center
Research Achievement: Water management innovations to enhance smallholder farmers' resilience to climate change in rice-based systems in sub-Saharan Africa

Andrés Javier CORTÉS VERA
(34 years old, Male, Colombian)
Professional Affiliation: Colombian Agricultural Research Corporation (AGROSAVIA)
Research Achievement: Research on the use of native genetic resources for the molecular hybrid breeding of common bean as a nature-based solution for the deployment of economic, sustainable and peaceful development in marginal communities across Colombia

Jutamat KLINSODA
(36 years old, Female, Thai)
Professional Affiliation: Institute of Food Research and Product Development, Kasetsart University
Research Achievement: Enhancement safety and nutrition along the chain of feeds, foods, and agricultural products by 16S rRNA gene sequencing microbiome innovation

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

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