

JIRCAS International Symposium 2021

"The Role of Science, Technology and Innovation in Achieving Sustainable Food Systems in the Asia Monsoon Region: A Platform for International Collaboration"

Program & Presentation Summary

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Live Streaming



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The Role of Science, Technology and Innovation in Achieving Sustainable Food Systems in the Asia Monsoon Region: A Platform for International Collaboration

With four out of the nine planetary boundaries, namely, climate change, biosphere integrity, land system change, and biochemical (nitrogen and phosphorous) cycles, already overstepping the safe operating spaces, there is an increasing awareness around the world on the urgency to minimize the anthropogenic impacts of economic activities on environment while achieving the Sustainable Development Goals (SDGs).

Many countries have already set ambitious quantitative targets toward carbon neutrality in response to the Paris Agreement and COP 26, and their commitments also encompass the low emission targets for the food systems, which globally account for about a third of the anthropogenic greenhouse gas (GHG) emissions. For example, the EU has proposed 'Farm to Fork Strategy' with quantitative targets to drastically reduce the use of chemical fertilizers and pesticides, and to promote organic farming. Such explicit commitments indicate the global community's determination to shift to the pathways in which science, technology and innovation (STI) in the food systems can play a key role to mitigate trade-offs and to amplify synergies between economic development and environmental sustainability. These innovations must be based on scientific infrastructure to make the food systems resilient to disasters and climate shocks through reducing environmental impacts and recycling resources without compromising food and nutrition security for present and future generations given the prospects of the growing world population.

In May 2021, Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF) unveiled the 'Measures for achievement of Decarbonization and Resilience with Innovation (Strategy for Sustainable Food Systems, MeaDRI)'. The MeaDRI Strategy has proposed pathways in which STI can take a central role in reducing environmental footprint while enhancing productivity for food production. To achieve impacts at the regional and global scales, socio-economically and technologically feasible STI options should be made available not only for Japan but also for countries sharing similar agroecological conditions, such as those in the Asia monsoon region.

In turn, it is essential to bear in mind that 'no one-size-fits-all'. The identification and customization of appropriate sets of STI to locally specific agroecological and socio-economic conditions is critical to turn trade-offs into win-win outcomes. To do so, consensus is needed for all stakeholders, i.e., agricultural research institutions and development agencies, to jointly contribute towards a common goal of achieving productivity improvement and environmental sustainability for the countries as well as the whole Asia monsoon region.

This Symposium will provide a forum to discuss a platform for international collaboration contributing to 'Strategy for Sustainable Food Systems'. To do so, first, it will review recent policy developments on agriculture, forestry and fishery sectors at country/regional level in the Asia monsoon region in the contexts of global debates on sustainable food systems transformation. The STI portfolios with evidence or potential to achieve both productivity improvement and environmental sustainability depending on agro-ecological and socio-economic contexts will be identified. Finally, the roles of stakeholders for international collaboration will be discussed based on respective comparative advantages.

Program

*Time schedule should be used only as a rough guide.

Opening

14:00-14:02	Opening Video
14:02-14:15	<p>Opening Remarks: KOYAMA Osamu President, JIRCAS</p> <p>Welcome Remarks: AOYAMA Toyohisa Director-General, Agriculture, Forestry and Fisheries Research Council Secretariat, Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan</p>

Keynote Speeches

14:15-14:30	<p>Research priorities in support of global and regional food systems transformations</p> <p>Joachim von BRAUN Chair, Scientific Group, UN Food Systems Summit. Professor for Economic and Technological Change Center for Development Research (ZEF), Bonn University</p>
14:30-14:45	<p>UN Food Systems Summit is only the First Step</p> <p>OSAWA Makoto Former Vice-Minister for International Affairs, Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan</p>

Presentation

14:45-14:55	<p>Transforming Agri-food Systems in the Asia-Pacific</p> <p>Sridhar DHARMAPURI Senior Food Safety and Nutrition Officer, FAO Regional Office for Asia and the Pacific</p>
14:55-15:05	<p>Creating opportunities for transformative climate adaptation and mitigation by farmers in the Asian Monsoon Region</p> <p>Jon HELLIN Platform Leader - Sustainable Impact through Rice-based Systems, International Rice Research Institute (IRRI)</p>
15:05-15:15	<p>Prioritized Initiatives in the Field of Agricultural and Rural Development in the Asian Monsoon Region</p> <p>UEDA Yasunari Executive Technical Advisor, Economic Development Department, Japan International Cooperation Agency (JICA)</p>
15:15-15:25	<p>Wise soil management for achieving triple wins in Agriculture-food security, adaptation and Mitigation</p> <p>SHIRATO Yasuhito Manager, Division of Climate Change Mitigation Research Institute for Agro-Environmental Sciences, National Agricultural and Food Research Organization (NARO)</p>
15:25-15:35	<p>Working for small-scale farmers towards sustainable food system in Asia Monsoon Region</p> <p>HAYASHI Keiichi Program Director/Environment, JIRCAS</p>

Panel Discussion

15:35-16:10

Panel Chair:

IYAMA Miyuki

Program Director/Information, JIRCAS

Closing

16:10-16:15

Closing Remarks:

YAMAMOTO Yukiyo

Vice-President, JIRCAS



Presentation Summary

Keynote Speeches



Prof. Joachim von BRAUN

Chair, Scientific Group, UN Food Systems Summit.

Professor for Economic and Technological Change Center for Development Research (ZEF), Bonn University

Research priorities in support of global and regional food systems transformations

The food systems today have a set of major problems that need to be addressed, including hunger and malnutrition, and the failure of markets to account for the true costs of unhealthy or unsustainably produced food. Science is central as means to accelerate the implementation of food systems transformation to achieve sustainable development goals, including the unfolding climate crisis. This presentation reviews key messages and outcomes of the United Nations Food Systems Summit and highlights major research priorities, especially biosciences and digital innovations, in support of global and regional food systems transformations. These innovations can be truly transformative, while ensuring inclusiveness is essential so as not to leave anyone behind. In the coming decade, not only a stronger framework is called for to integrate food system research strategies into national development policies, but also a new, inclusive, global science-policy interface to achieve a sustainable food system.



Mr. OSAWA Makoto

Former Vice-Minister for International Affairs, Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan

UN Food Systems Summit is only the First Step

The United Nations Food Systems Summit (FSS) was the first summit of food systems, reflecting the widespread recognition on the interlinkages between various agricultural and food-related issues through changes in the world's diet. In response to international developments to call for more sustainable agricultural production system, Japan has formulated the MeaDRI Strategy (Measures for achievement of Decarbonization and Resilience with Innovation) which aims to simultaneously achieve productivity and sustainability through innovation across the entire food system by 2050. The key principles of the MeaDRI Strategy include, (1) no one-size-fits-all solution, the importance of taking into account regional conditions, (2) the promotion of innovation, and (3) a balanced diet. Based on experiences in the involvement in the preparation for the FSS as the “National Convener”, this presentation focuses on proposals for concrete actions as way forward to follow up the FSS process to realize food systems transformation not only in Japan, but also in the Asia monsoon region and beyond.

Presentation



Mr. Sridhar DHARMAPURI

Senior Food Safety and Nutrition Officer, FAO Regional Office for Asia and the Pacific

Transforming Agri-food Systems in the Asia-Pacific

The Asia-Pacific region is a very diverse region, including for example, countries in an acute state of humanitarian crisis vs. members of the G20 and even the G8, countries with aging populations vs. with huge youth populations, countries suffering from undernutrition vs. from overweight, and so on. While the share in the GDP varies across countries, as the Asia-Pacific region as a whole, agriculture accounts for almost 40 percent of the global emissions. At the same time, the agriculture sector in the region suffers from serious degradation of natural resources, while it is prone to climate-related disasters and trans-boundary pests and diseases. With the UN Food Systems Summit resulted in a high-level call for action, the presentation explains how the FAO Regional Office of Asia-Pacific supports its member states to transform agri-food systems into more efficient, inclusive, resilient and sustainable, and more importantly, to leave no one behind.



Dr. Jon HELLIN

Platform Leader - Sustainable Impact through Rice-based Systems, International Rice Research Institute (IRRI)

Creating opportunities for transformative climate adaptation and mitigation by farmers in the Asian Monsoon Region

There is a range of climate-smart agriculture (CSA) technologies and practices which can contribute to adaptation, mitigation as well as food security. Research on CSA tends to report on how many farmers have adopted CSA, and what land area is dedicated to CSA etc. These numbers, however, reveal less about the outcomes and impacts of CSA including the trade-offs that can arise from 'maladaptation'. Farmers are not homogeneous, not only are they constrained by agro-ecological, socio-economic, and political factors, but there are also divisions caused by gender norms and power relations. This makes particular groups of farmers more vulnerable to climate change and, simultaneously, less able to benefit from CSA. Interventions may end up replicating or exacerbating some of those vulnerabilities and inequalities, if sufficient attention is not paid to their root causes. Interdisciplinary research, the mix of natural and social science research, is needed to understand and address the root causes of vulnerability and ensure that CSA, via transformative adaptation and mitigation, contributes more to the realization of the Sustainable Development Goals (SDGs).

Presentation: Prioritized initiatives in the field of agriculture and rural development in the Asian monsoon region

Presentation



Mr. UEDA Yasunari

Executive Technical Advisor, Economic Development Department, Japan International Cooperation Agency (JICA)

Prioritized Initiatives in the Field of Agricultural and Rural Development in the Asian Monsoon Region

The Japan International Cooperation Agency (JICA) has set four objectives in its business strategy starting this fiscal year in the field of agriculture and rural development including the establishment of an inclusive food value chain (FVC) that includes small-scale farmers as participants and beneficiaries. In order to establish modern FVCs in Southeast Asia, it is necessary to develop a Smart Food Chain using advanced methods such as IOT technology. In addition, in order to build a sustainable food system, it is also necessary to promote innovations to reduce environmental impacts such as carbon neutrality and resilience. JICA is pursuing the promotion of STI through the international joint research project called the “Science and Technology Research Partnership for Sustainable Development (SATREPS) Project”, under a common research target of research institutions in Japan and a developing country. However, there are diverse challenges, needs and issues in developing countries. In order to address these issues, JICA has formulated new actions in Japan with the establishment of the JICA Platform for Food and Agriculture (JIPFA) and the Agriculture Co-creation Hub, which promote information sharing and business matching among stakeholders.



Dr. SHIRATO Yasuhito

Manager, Division of Climate Change Mitigation Research Institute for Agro-Environmental Sciences, National Agricultural and Food Research Organization (NARO)

Wise soil management for achieving triple wins in Agriculture-food security, adaptation and Mitigation

Adaptation and mitigation are both important to tackle climate change. There are variety of techniques for mitigating agricultural GHG emission. Better water management in paddy fields to reduce CH₄ emission is one of promising techniques which could widely be applicable in Monsoon Asia. Storing carbon in soils is also one of attractive measure with an advantage in enhancing soil productivity, and thus promoting a win-win situation in climate change mitigation. Long-term field experiments are valuable to show the effectiveness of such management practices. Furthermore, networking long-term datasets in Monsoon Asia region will bring more value to target outcomes. Consideration of trade-offs among different environmental impacts and benefits is essential for decision making for producers and policy makers.

Key message: Wise soil management is important to achieve triple wins in agriculture - food security, adaptation, and mitigation.

Presentation



Dr. HAYASHI Keiichi

Program Director/Environment, JIRCAS

Working for small-scale farmers towards sustainable food system in Asia Monsoon Region

JIRCAS has been serving for agricultural research in the world since 1970, through working together with local and international partners with better understanding of local context, especially farmers' problems and needs. In the Asian monsoon region, we are addressing the issue of rice, one of the major sources of GHG emissions, and livestock, which emit large amounts of CH₄. In addition to GHG emissions from agriculture, we are also studying transboundary pests that threaten the food system in the Asian monsoon region, including Japan, and developing the technologies needed to create and produce resilient crops that are resistant to various external disturbances, such as poor environments. In addition, we have succeeded in developing rice with high nitrogen utilization efficiency, which shows higher yield for the same nitrogen fertilizer dose. Our foundation is a holistic research skill through natural and social science in various areas of agriculture, forestry and fisheries, and we have more than 5 decades of experiences in international research with various partners. In order to effectively utilize our research efforts in solving global issues, we need to continue and strengthen our collaboration with other Japanese and international organizations.



In cooperation with:

Ministry of Agriculture, Forestry and Fisheries

National Agriculture and Food Research Organization

Food and Agriculture Organization of the United Nations, Liaison Office in Japan