



Next-generation Circular Bio Economy Symposium Report

# “Next-generation Circular Bio Economy Symposium: Celebration of the 70th Anniversary of Friendship between Japan and Cambodia” Holding Report

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The year 2023 marked the 50th year commemorating of ASEAN–Japan relations. Japan and Cambodia, also celebrated the 70th anniversary of the establishment of diplomatic relations between Japan and Cambodia in 2023. Taking advantage of these opportunities, we held an international symposium, titled “Next-generation Circular Bio Economy Symposium: Celebration of the 70th Anniversary of Friendship between Japan and Cambodia,” on February 2, 2024 (Friday) at the Royal University of Agriculture, Cambodia (RUA) to deepen our understanding of the current situation surrounding ASEAN countries and east Asian countries and provide information regarding the recent progress of Cambodian agriculture and efforts to resolve various issues. This symposium was hosted by RUA; General Directorate of Agriculture (GDA); Ministry of Agriculture, Forestry and Fisheries, Cambodia, Nagoya University (NU) International Center for Research and Education in Agriculture (ICREA); Graduate School of Bioagricultural Sciences (GSBS); Center for Low-temperature Plasma Sciences (CLPS); Graduate School of Engineering, Center for Asian Legal Exchange (CALE); and Asian Satellite Campuses Institute (ASCI); and it was co-organized by IRRI–Cambodia Liaison, Nagoya University Interdisciplinary Frontier Fellowship–Creating the Future of Asia. With 18 committee members selected from both countries, Secretaries in charge of planning and managing

the symposium included Chair NGO Bunthan (RUA Rector); Vice Chairs of the Organizing Committee, MIZUTANI Norimi (NU Vice President) and NGIN Chhay (GDA Director General (DG)); Chair and Vice Chair of the Steering Committee, HUON Thavrak (RUA Vice Rector) and CHOU Cheythyryth (GDA Deputy DG), respectively; Executive Secretary EHARA Hiroshi (NU ICREA Director); Secretaries, and BUNTONG Borarin (RUA Director of Research and Extension) and SRUN Khema (GDA Crop Seed Crop Department Deputy Director).

Cambodia’s agricultural production has increased dramatically in recent years. It now ranks 10th in the world in terms of rice production, and its position in the international market has increased to 9th in the world in terms of milled rice exports. However, even with such rapid progress in rice production, many issues remain. For example, approximately 70% of rice is produced under rain-fed conditions due to the lack of irrigation development, and so measures to stabilize rice cultivation are highly needed. On the other hand, there are also high hopes for improving the quality of agricultural products domestically and internationally. Toward such improvements in quantity and quality, there are challenges such as a shortage of fertilizers and other materials due to climate change and unpredictable changes in the international social situation, as well as social needs

entailed in a shift to sustainable and circular cultivation technologies. Through our collaboration with Cambodian partner organizations, we aimed to demonstrate the emerging technologies of next-generation green Agri-tech, discuss measures to deploy them for social implementation, and aim to contribute to strengthening the green agri-bioeconomy targeting 2030 and 2050, taking into account the Royal Government of Cambodia–Pentagonal Strategy: 1) Human Capital Development; 2) Economic Diversification and Competitiveness Enhancement; 3) Development of Private Sector and Employment; 4) Resilient, Sustainable and Inclusive Development; and 5) Development of the Digital Economy and Society.

In this symposium, Cambodian and Japanese experts from their governments, academia, private sectors and international NGOs that have long collaborated for joint research projects and programs shared information on recent developments in Cambodian primary industries. They also discussed their efforts to solve mounting challenges related to climate change and unpredictable changes in the international social situation by promoting of agricultural practices geared toward sustainable production.

The opening ceremony was held with H.E. CHAN Phaleun, Under-Secretary of State of the Ministry of

Agriculture, Forestry and Fisheries, DG of GDA, Deputy Head of Mission, of the Embassy of Japan in Cambodia, Program Advisor of the Food and Agricultural Organization (FAO), International Rice Research Institute (IRRI) Representative for Cambodia, Director of Graduate Program of the Royal University of Law and Economics (RULE). Following the opening speech by the RUA Rector, a keynote speech was given by IRRI Senior Scientist, and a keynote speech was given by the GDA DG. Thematic sessions focused on 1) human resource development, 2) economic diversification and development, 3) utilization of private sector vitality, 4) social resilience and sustainability, and 5) development of a digital society (Table 1). Through eight lectures from agricultural universities and Japanese companies and a comprehensive discussion, prospects and measures for strengthening the circular agri-bioeconomy based on sustainable production were explored.

This symposium was held under the patronage of FAO, Japan Embassy in Cambodia, Japan International Cooperation Agency (JICA) Cambodia Office, Japan Intellectual Support Network in Agricultural Sciences (JISNAS), Plasma-seed Science Study Group, Satake Corporation, Kota Town in Aichi Prefecture. We express our gratitude.

**Table 1** Programme of the symposium.

<b>Opening Ceremony</b>		MC: Dr. SOEUNG Rasmey (RUA)
Welcome Remark	Professor Dr. NGO Bunthan, <i>Rector, RUA</i>	
Purpose of the symposium	Prof. Dr. YAMAUCHI Akiram <i>Director, NU ASCI</i>	
Remark	Dr. HAP Phalthy, <i>Director of Graduate Program, RULE</i> Ms. ANN Chansopheak, <i>Program Advisor, FAO</i> Mr. TANINAI Ichitomo, <i>Deputy Head of Mission, Embassy of Japan in Cambodia</i>	
Opening Remark	H.E. CHAN Phaleun, <i>Under-Secretary of State, Ministry of Agriculture, Forestry and Fisheries, Cambodia</i>	
<b>Keynote Session</b>		Chair: Prof. OHKURA Satoshi (NU) & Dr. SOEUNG Rasmey (RUA)
Keynote Lecture	Dr. SAITO Kazuki, <i>Senior Scientist, IRRI</i> “History and Progress in Rice Research and Its Future Perspective in Cambodia”	
Keynote Speech	Dr. NGIN Chhay, <i>Director General, GDA</i> “Agricultural Policy in Cambodia for a New Era”	
<b>Session [1]</b>		Chair: Prof. SURIYASATHAPORN Witaya & Dr. RIN Soriya (NU)
Theme 1	<b>Human Capital Development</b>	
	Prof. Dr. MURAKAMI Masako, <i>Director, NU CALE</i> “International Collaboration in Legal Education for Human Resource Development towards the Co-creation of Legal systems in Asia”	
Theme 2	<b>Economic Diversification and Competitiveness Enhancement</b>	
	Dr. KONG Kea, <i>Director, Rice Department, GDA</i> “Gross Return Considering Input Costs and Expectations for Economic Effects from Quality Improvement in Rice Production” Prof. Dr. TOKUDA Hiromi, <i>NU GSBS</i> “Expectations and Challenges of Digital Innovation for Smallholders Economy”	

Theme 3	Development of Private Sector and Employment
	Dr. FUJITA Akiko <i>Manager, Grain Res. Team, Sensing Systems Group, Tech. Div., Satake Corp.</i> “Development of the Quality Evaluation System of the Rice in Japan”
Session [2] Chair: Dr. BUNTONG Borarin (RUA) & Dr. ITO Kasumi (NU)	
Theme 4	Resilient, Sustainable and Inclusive Development
	Prof. Dr. ISHIKAWA Kenjim <i>Head, Semiconductor Processes Division, NU CLPS</i> “Sustainable Innovations of the Low-Temperature Plasma-Agriculture”  Dr. THO Kimeang, <i>Deputy Director, Division of Research and Extension, RUA</i> “Cultivar Trials, and Pest and Disease Management for Peanut Production in Cambodia”
	Dr. CHEM Mouylin, <i>Researcher, Faculty of Agro-Industry, RUA</i> “Functional Foods and Nutraceuticals: Their Role in Resilient, Sustainable and Inclusive Health Development”
Theme 5	Development of Digital Economy and Society
	Dr. NISHIUCHI Shunsaku, <i>Assistant Professor, NU GSBS</i> “Utilization of AI in Crop Production for Development of ABC (Agri Bio Circular) Economy”
Wrap-up Session	
Moderators: Prof. Dr. EHARA Hiroshi (NU) & Dr. SRUN Khema (GDA) Commentator: Prof. Dr. NAKAZONO Mikio, <i>Dean, NU GSBS</i>	
Closing Ceremony MC: Dr. SRUN Khema (GDA)	
Closing address	Dr. HUON Thavrak, <i>Vice Rector, RUA</i>



Fig.1. Opening ceremony of the symposium.