

**ASEAN Innovation Week  
21-25 August 2023, Bangkok, Thailand**

Date/Room	21 August	22 August	23 August	24 August	25 August
Ballroom A	<p><b>Morning:</b> The 4th ASEAN Innovation Roadmap Forum (MHESI)</p> <p><b>Afternoon:</b> ASEAN-EU: Microbial Utilisation for Energy Security and Clean Environment</p>	Opening ASEAN-Japan Innovation Fair (JST)	ASEAN BCG Competition Award (NSTDA)	BCG Economy Model: Circular for Potential for Green Recovery in ASEAN (NSTDA)	<p><b>Excursion</b></p> <p><b>1. Ratchaburi Model</b> Visit Place: - Maikaew Damnoen Resort - NC coconut Co., Ltd. (Head office), Ratchaburi province Introduction: The Happy Model is introduced to revive Thailand's tourism industry badly suffered from the pandemic. It aims at promoting medical and wellness tourism – a high-value and high-growth-potential sector – and strengthening local communities. Ratchaburi Model is one of the achievements in applying the Model, based on BCG economy with cooperation between farmers, communities, and public and private sectors.</p> <p><b>2. Eastern Economic Corridor (EEC)</b> Visit Place: - Kubota Farm, Ban Bueng, Chonburi Province - The Eastern Economic Corridor of Innovation (EECi) Headquarter, Wangchan Valley, Rayong Province</p> <p>Introduction: Kubota Farm, located on over 220 rai (352,000 square meters) in Ban Bueng District, Chonburi Province, is the first experimental comprehensive modern farm of ASEAN. Its mission is to enhance the region's capacity for sustainable agricultural production and allow Thai farmers access to precision farming innovation.</p> <p>The Eastern Economic Corridor of Innovation or EECi is an innovation hub located at the heart of the Eastern Economic Corridor (EEC) in Wangchan District, Rayong Province. EECi provides translational research facilities and quality infrastructures. Its backbone of innovation platforms comprises the domains of biotechnology, digital and advanced material technologies, and industry-specific technologies.</p>
Ballroom B	<p>ASEAN Regional Research Infrastructure Forum</p> <p><b>Morning:</b> Plenary Session</p> <p><b>Afternoon:</b> ASEAN-EU RRI Workshop (RRI Taskforce)</p>	ASEAN-Japan RRI Workshop	JASTIP Session (TBC)		
A	Workshop on Accelerator Application in Research (LNSN)	Workshop on Accelerator Application in Research (LNSN)	Pitch Presentation (JST)		
B	Metrology for Digital Transformation (NIMT)	Seminar on Entrepreneurship and Implementation (JST)		Enhancing the STI activities between ASEAN-Japan through NECTEC-NICT technical workshop (NECTEC/NSTDA)	
C	ASEAN-Japan Consortium on Nanopore Technology (NANOTEC/NSTDA)		Development and Trends in Individual Radiation Monitoring Services (IMS) in the Asia-Pacific Region (OAP)		
D	Advancing sustainable HPC for scientific and economic development under ASEAN and Japan collaboration (NECTEC/NSTDA)			ASEAN-Japan sustainable innovation on natural rubber workshop "Soil erosion prevention and agricultural productivity improvement by natural rubber LATEX" (MTEC/NSTDA)	

# ASEAN-Japan Sustainable Innovation on Natural Rubber Workshop

## “Soil Erosion Prevention and Agricultural Productivity Improvement by NATURAL RUBBER LATEX”

Jointly organized by:  
National Metal and Materials Technology Center (MTEC)  
National Science and Technology Development Agency (NSTDA)  
Land Development Department (IDD)  
Ministry of Agriculture and Cooperatives (MOAC)  
Okayama University

Supported by Ministry of Higher Education, Science, Research and Innovation (MHESI)

### Date and Time:

August 24, 2023, Time: 9:00 – 16:30 (Thailand Time - UTC +7.0)

### Venue:

Centara Grand at Central Plaza Ladprao (TBC)

### Background:

Southeast Asia's economy is driven by agricultural products which are derived from soil. Land and soil's health play an important role in the yield of crop production of cultivation and agriculture. However, agricultural fields in Southeast Asia are oxidized soils with high dispersibility due to the high temperature, high humidity, and strong ultraviolet light that accelerate the decomposition of organic matter. Furthermore, due to localized heavy rain especially in the rainy season, soil surface runoff is likely to occur, and due to its high dispersibility, soil runoff is remarkably high. As a result, the carbon and trace elements accumulated in the field flow out into the water, causing global problems such as global warming and impacts on terrestrial and marine ecosystems. These situations can cause problems in soil structure and runoff. Although soil is a renewable natural resource, it takes between 100 and 1,000 years to form a 2-3 centimeters thick stratum of soil (Department of Land Development, 2015). Therefore, we should all collaborate to conserve soil resources for long-term use.

Natural rubber is one of agriculture products which was accounted roughly 70 percent of the global value of natural rubber exports of countries in the Association of Southeast Asian Nations (ASEAN) – specifically Thailand, Indonesia, Vietnam, and Malaysia. In this decade, the consumption demand of both aquas and solid state of rubber decreased which was effect by pandemic and economic situation. As market surplus will be utilized to modify agricultural fields, especially on soils. This application will be highly applicable in the field in the future, due to natural latex having a good film-forming ability and high elasticity when dry which could stabilize soil structure. There is a high possibility that it can be a new solution for soil erosion prevention and agricultural productivity improvement. The supply of latex is expected to improve water retention, permeability, and air permeability, and soil erosion will be reduced by promoting aggregation.

Due to the soil used for agricultural cultivation in tropical regions, the majority of the soil is found to have structural problems with low water retention, reduced fertility, and a compaction of the soil layer that causes water to discharge slowly. Therefore, the research team has motivated the use of natural latex as a binder of soil granular particles in order to achieve the desired soil density. It holds more water and has good drainage because natural rubber is an organic compound such as hydrocarbons. It has tough properties and high flexibility. In

addition, natural latex contains non-rubber components such as proteins, phospholipids, and inorganic substances (magnesium, copper, manganese, etc.) which can break down into soil nutrients for plants.

**Objectives:**

1. To exchange research information on soil structure problems on yield impacts, including soil resource management of each country.
2. To update the participants from the ASEAN Member States with the results researched by National Science and Technology Development Agency (NSTDA), Thailand and Okayama University, Japan.
3. To create a network for ASEAN Member States to exchange their insights and experience in relevant fields which could be a chance for further collaboration.

**Contribution to ASEAN:**

Research collaboration toward Sustainable Development Goals (SDGs)

**Speakers:**

**Japanese Speakers**

1. Speaker from Okayama University (Name will be informed)
2. Speaker from Okayama University (Name will be informed)

**Thai Speakers**

1. Speaker from National Metal and Materials Technology Center (MTEC) (Name will be informed)
2. Speaker from Land Development Department (IDD) (Name will be informed)

**ASEAN Speaker**

Five Speakers from ASEAN countries  
(Names will be informed)

**Target group & Number of Participants:**

**Target Group:** Researchers from ASEAN, Japan, and related parties

**Number of Participants (onsite):** 40

**Tentative Schedule:**

**August 24, 2023 (AM – Research sharing session, PM – Joint technical session)**

Time	Topic	Contributors
<b>Research Sharing Session</b>		
09:00-09:20	Opening ceremony	Representatives from MHESI/NSTDA
09:20-09:30	Group photo	
09:30-9:50	“xxxxx”	Presentation from Japanese speaker Okayama University
9:50-10:10	“xxxxx”	Presentation from ASEAN speaker (TBC)
10:10-10:30	“xxxxx”	Presentation from ASEAN speaker (TBC)
10:30-10:45	Coffee Break	
10:45-11:05	“xxxxx”	Presentation from ASEAN speaker (TBC)

Time	Topic	Contributors
11:05-11:25	"xxxxx"	Presentation from ASEAN speaker (TBC)
11:25-11:45	"xxxxx"	Presentation from ASEAN speaker (TBC)
11:45-12:00	Q&A section	
12:00-13:00	Lunch	
<b>Joint Technical Session</b>		
<b>Present collaboration concept idea under the topic "Soil Erosion Prevention &amp; Agricultural Productivity Improvement"</b>		
13:00-13:20	"xxxxx"	Presentation from ASEAN speaker (TBC)
13:20-13:40	"xxxxx"	Presentation from ASEAN speaker (TBC)
13:40-14:00	"xxxxx"	Presentation from ASEAN speaker (TBC)
14:00-14:20	"xxxxx"	Presentation from ASEAN speaker (TBC)
14:20-14:35	Coffee break	
14:35-14:55	"xxxxx"	Presentation from Japanese speaker Okayama University
14:55-15:15	"xxxxx"	Presentation from Thai speaker Land Development Department (IDD)
15:15-15:25	"xxxxx"	Presentation from Thai speaker National Metal and Materials Technology Center (MTEC)
15:35-16:30		Wrap-up & Discussion
16:30	Closing ceremony	Representatives from MTEC