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Japan Science and Technology Agency
5-3, Yonbancho, Chiyoda-ku, Tokyo

JST is to fund five research projects for the e-ASIA Joint Research Program in the fields of "Environment (Low Carbon Society)"

The Japan Science and Technology Agency (JST) decided to start new projects within the framework of the e-ASIA Joint Research Program [*1].

JST and four funding agencies from three countries (Appendix 1) jointly opened the call for research projects in the fields of "Environment (Low Carbon Society)".

A total of 29 proposals were submitted in response to the joint call. Based on an expert evaluation conducted in each country (Appendix 2), JST and the other funding agencies jointly decided to support five projects (Appendix 3).

The research period is scheduled to be three years.

*1) e-ASIA Joint Research Program (e-ASIA JRP)
Through the acceleration of science and technology research exchange and collaboration in the Pacific Rim countries and ASEAN countries, etc., the e-ASIA Joint Research Program (e-ASIA JRP) aims to strengthen research and development capabilities towards resolution of shared challenges across the region, including those associated with materials, alternative energy, agriculture, health research, disaster risk reduction and management, advanced interdisciplinary research towards innovation, and environment.
As part of that objective, e-ASIA JRP is intended to support collaborative research implemented among three or more of its member countries. Through the implementation of joint research among participating countries in agreed fields of research, it is the goal of the e-ASIA JRP to contribute to economic and human resource development, as well as the resolution of various challenges in the region.
URL: https://www.the-easia.org/jrp/

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Contact
Department of International Affairs, JST
K's Gobancho, 7 Gobancho, Chiyoda-ku, Tokyo 102-0076
SUGAWARA Masae
Tel: +81-3-5214-7375
E-mail: easiajrp[at]jst.go.jp

Appendix 1

Participating funding agencies

Environment (Low Carbon Society)

Country Name	Funding Agency Name
Japan	Japan Science and Technology Agency (JST)
Indonesia	Ministry of Education, Culture, Research and Technology (DIKBUDRISTEK)
Lao PDR	Ministry of Education and Sports (MOES)
Thailand	National Research Council of Thailand (NRCT)
Thailand	Program Management Unit for Human Resources & Institutional Development, Research and Innovation (PMU-B)

Appendix 2

Experts for evaluation (JST)

Environment (Low Carbon Society)

Member Name	Position and Institution	Note
HIJIOKA Yasuaki	Director, Center for Climate Change Adaptation, National Institute for Environmental Studies	Program Officer
OTOMO Junichiro	Professor, School of Environment and Society, Department of Transdisciplinary and Engineering, Tokyo Institute of Technology	Advisor
KAINUMA Mikiko	Research Advisor, Institute for Global Environmental Strategies	Advisor
SATO Fumihiko	Professor Emeritus, Kyoto University Director, Bioorganic Research Institute, Suntory Foundation for Life Sciences	Advisor
TANIGUCHI Ikuo	Professor, Fiber Science and Engineering, Kyoto Institute of Technology	Advisor
NAKAOKA Masahiro	Professor, Field Science Center for Northern Biosphere, Hokkaido University	Advisor
MORI Shunsuke	Professor Emeritus, Tokyo University of Science	Advisor
YAMADA Hidetaka	Associate Professor, Frontier Science and Social Co-creation Initiative, Kanazawa University	Advisor

Appendix 3

Abstracts of the new projects – Environment (Low Carbon Society)

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
AI-supported Tool Development for Decarbonized Food System	<u>AMASAWA Eri</u> (Japan)	Project Associate Professor, Research Center for Advanced Science and Technology, The University of Tokyo	Greenhouse gas (GHG) emissions from food systems account for one-third of global anthropogenic emissions. In order to reduce the contribution, it is necessary to reduce GHG emissions from each stage of food production, consumption, and disposal. This research aims to develop a decarbonization tool using AI for each stage of the food system. The Indonesian team will use AI in agricultural management, the Thai and Japanese teams will calculate carbon footprints from restaurant menus using image recognition and machine learning, and the Thai team will build a matching platform to reduce food waste. A team in Japan will conduct a survey of consumer acceptance of the developed tools. Through joint research by these three countries, we aim to propose advanced decarbonization initiatives using AI from upstream to downstream of the food system.
	Santi Phithakkitnukoon (Thailand)	Associate Professor, Department of Computer Engineering, Faculty of Engineering, Chiang Mai University	
	Zainal Arifin Hasibuan (Indonesia)	Professor, Faculty of Computer Science, University of Dian Nuswantoro	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Design of Innovative Sustainable Urban Mobility in Asia	KATO Hironori (Japan)	Professor, Graduate School of Engineering, The University of Tokyo	This collaborative research aims to perform international case studies incorporating participatory processes of stakeholders for proposing guidelines towards the development of sustainable mobility system in ASEAN member countries. Specifically, the Japanese research team will design and lead the study process, supervising the entire research activities through organizing participatory workshops with international comparisons of case studies from each country. Each country will perform case analyses on sustainable mobility strategies like ride hailing, bus-rail operator coordination with electric motorcycle taxis and so on, in which local contexts and unique solutions against the local challenges are investigated through the participation of international workshops. Through the collaborative and complementary research among the three countries, this research is expected to propose pragmatic guidelines for sustainable urban mobility to international organizations and local transportation authorities in each country, incorporating the diversity and uniqueness of ASEAN countries.
	Saksith Chalermpong (Thailand)	Professor, Faculty of Engineering, Chulalongkorn University	
	Muhammad Zudhy Irawan (Indonesia)	Associate Professor, Department of Civil and Environmental Engineering, Gadjah Mada University	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Developing Integrated Agriculture Wastes – Carbon Capture Model for Mitigation of Greenhouse Gas Emissions in Rice Production in Asia	NOBORIO Kosuke (Japan)	Full Professor, School of Agriculture, Meiji University	This collaborative research aims to reduce carbon and greenhouse gas (GHG) emissions by converting agricultural and food wastes into valuable rice-producing fertilizers and livestock feeds. Specifically, the Japanese research team will develop a GHG flux measuring device and transfer the analysis methods, including machine learning, to each country team. The Thai team will convert rice straw charcoal and agricultural wastes into livestock feed and fertilizer. The Indonesian team will use neural networks to model the relationship between agricultural waste conversion fertilizer and GHG emissions. The Lao PDR team will conduct experiments with rice straw charcoal, agricultural waste fertilizer, and livestock feed. Throughout the four country teams' joint research, carbon emission reduction and sequestration from rice agriculture are expected.
	Jonaliza Siangliw (Thailand)	Senior Researcher, The Integrative Crop Biotechnology and Management Research, National Center for Genetic Engineering and Biotechnology	
	Chusnul Arif (Indonesia)	Associate Professor, Department of Civil and Environmental Engineering, IPB University	
	Phetmanyseng Xangsayasane (Lao PDR)	Director, National Agriculture and Forestry Research Institute, Ministry of Agriculture and Forestry	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Coastal Ecosystems as Nature Climate Solution in Asia	HAYASHIZAKI Ken-ichi (Japan)	Associate Professor, School of Marine Biosciences, Kitasato University	This collaborative research aims to enhance coastal seagrass and seaweed for carbon sequester. We will develop the basis of a value evaluation for a carbon credit to establish a carbon offset system that brings the favorable spiral to enhance coastal plants as carbon sequesters. Specifically, the Japanese research team will conduct a field study to reveal the state and condition of local communities, government, and companies for coastal plant enhancement in member countries, and conduct WEB surveys for the altitude and opinion of stakeholders (citizens). The Thai and Indonesian teams will study carbon dioxide absorption and sequestration by coastal plants with technical support from Japan side. Through collaborative and complementary research among 3 countries, this research is expected to develop carbon credit system in each country and introduce Japan origin carbon offset system.
	Anchana Prathep (Thailand)	Dean, Faculty of Science, Prince of Songkla University	
	Nurjannah Nurdin (Indonesia)	Professor, Faculty of Marine Science and Fisheries, Hasanuddin University	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Closed-loop Recycle Process of Spent Primary and Secondary Batteries and the Reutilization for the Environmental Applications & Circular Economy	WATANABE Tomoaki (Japan)	Professor, School of Science and Technology, Meiji University	This research project aims to collect Mangan (Mn), Zinc (Zn) and Carbon (C) from spent alkaline and Zinc-Carbon batteries as well as Lithium (Li), Mn, Cobalt (Co), Nickel (Ni) and C from spent Li-ion battery collected in Thailand, Japan and Indonesia, and then reutilize them for ion-battery and photocatalysts as closed-loop recycle. The Japanese team will develop low-cost Li recovery technology using the hydrothermal methods. The Indonesian team will develop materials recycle for high-performance Li-ion battery with fast-charging capability. The Thai team will develop materials recycle for ion battery and photocatalysts. This collaborative research will contribute resource conservation and establish a sustainable society by appropriately recycling used battery.
	Rojana Pornprasertsuk (Thailand)	Associate Professor, Faculty of Science, Chulalongkorn University	
	Lukman Noerochim (Indonesia)	Associate Professor, Corrosion and Batteries Laboratory, Sepuluh Nopember Institute of Technology	

Underlined: Lead Principal Investigator

Annex

Abstract of the joint call for proposals

(1) Proposal field application requirements (Japan side):
In addition to the Japanese team, the project consortium must include members from a minimum of two different countries listed as participating in the call.

(2) Applicant eligibility (Japan side):
Any independent researcher personally affiliated with and actively conducting research at a domestic Japanese research institution, regardless of nationality, is eligible to apply.

(3) Research period:
3 years (36 months)

(4) Amount of funding (JST):
Up to 35.1 million Japanese yen from JST to the researchers (Japan-based team) per project over three years, inclusive of overhead costs (30 percent of direct costs).

(5) Evaluation method:
Based on evaluation by experts from the countries which held the joint call, including Japan, and discussion by JST and other funding agencies.

(6) Evaluation criteria (JST):
The following were among the general criteria considered in the evaluation process:

1) Conformity with e-ASIA JRP aims such as regional relevance and designated research fields
2) Capability of the research leaders and relevance of their current research activities
3) Effectiveness and synergistic mutual benefit of the joint research activities
4) Validity of the research plan
5) Effectiveness and continuity of exchange
6) Validity of the exchange plan