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

JST is to fund six research projects for the e-ASIA Joint Research Program in the fields of "Advanced Interdisciplinary Research towards Innovation (Water Resource Management)" and "Environment (Climate Change Impact on Natural and Human Systems)"

The Japan Science and Technology Agency (JST) decided to start new projects within the framework of the e-ASIA Joint Research Program [*1] (Appendix 1, 2).

JST and 9 funding agencies from 7 countries (Appendix 3) jointly opened the call for research projects in the fields of "Advanced Interdisciplinary Research towards Innovation (Water Resource Management)" and "Environment (Climate Change Impact on Natural and Human Systems)".

A total of 48 proposals, 26 in the field of "Advanced Interdisciplinary Research towards Innovation (Water Resource Management)" and 22 in the field of "Environment (Climate Change Impact on Natural and Human Systems)" were submitted in response to the joint call. Based on an expert evaluation conducted in each country (Appendix 4), JST and the other funding agencies jointly decided to adopt six projects, three in the field of "Advanced Interdisciplinary Research towards Innovation (Water Resource Management)" and three in the field of "Environment (Climate Change Impact on Natural and Human Systems)".

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 East Asian region, 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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Appendix 1: Abstracts of the new projects – Advanced Interdisciplinary Research towards Innovation (Water Resource Management)

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Development of machine learning and remote sensing-based water management platform for sustainable agriculture in Asian deltas (MARSWM-Asia)	YOSHIKAWA Natsuki (Japan)	Associate Professor, Faculty of Agriculture, Niigata University	The goal of this research project is to jointly develop an Integrated Water Management Platform for Asian deltas, a platform that will support appropriate water facility management by combining numerical calculations with machine learning and applying remote sensing and ICT, mitigating flood and saltwater damages and damages attributed to other water-related hazards. More concretely, the Japan team will lead the development of numerical calculations and machine learning for controlling flood and saltwater intrusions, remote sensing techniques, sensor network systems and GIS-based applications, the Vietnam team will plan practical implementation and development of physical models, and the Indonesia team will design the system for less modernized regions and development of remote-sensing techniques. Through collaborative and complementary research, the teams will develop an Integrated Water Management Platform that is applicable to different environments and development stages.
	Lan Thanh Ha (Viet Nam)	Researcher/Head of Department, Institute of Water Resources Planning (IWRP), Ministry of Agriculture and Rural Development	
	Budi Indra Setiawan (Indonesia)	Professor, Civil and Enviro. Engineering (CEE), Bogor Agricultural University	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Wastewater-informed early warning system to minimize impact of COVID-19 and Disease X (COVID-X)	HARAMOTO Eiji (Japan)	Professor, Interdisciplinary Center for River Basin Environment, University of Yamanashi	This research project aims to develop a framework for reducing risks to urban health from novel coronavirus (SARS-CoV-2) and upcoming pathogens through monitoring wastewater. This will contribute to the prevention of recurrences of COVID-19, as well as the prevention of future unknown pandemics (Disease X). Specifically, the Japanese research team will lead the project in coordination, technical and scientific analysis. The Indonesia and Vietnam teams will work on their own country components including the sampling, monitoring, and risk management frameworks bearing in mind the diverse social, cultural, political, and economic backgrounds of each country and area. Through collaborative and complementary teamwork, this research is expected to propose an early warning system applicable to countries and areas with diverse backgrounds.
	Tjandra Setiadi (Indonesia)	Professor, Chemical Engineering, Institut Teknologi Bandung	
	The Hung Dang (Viet Nam)	Dr./Director, Laboratory Center, Hanoi University of Public Health	

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Integrated water resources management with wise reservoir operation (Water 3In)	OKI Taikan (Japan)	Professor, Graduate School of Engineering, the University of Tokyo	This research project aims to implement a dam operation model incorporating dam inflow prediction developed with innovative ICT (AI and deep learning) using big data in climate and meteorology. Specifically, the Japanese research team will evaluate the dam operation model using predictions of dam inflow and water demand, water quality, and information on irrigation and drainage. The Thai research team will collect the required data in climate and meteorology for the dam inflow prediction, prepare the database, and lead the development of a river model to incorporate into the dam operation model. The Lao PDR research team will collect required information in water quality, irrigation and drainage for the Japanese research team. Through collaborative and complementary research among three countries, this research is expected to contribute to stable water management, achievement of SDG 6 (Target 6.4, 6.5, 6.a), and developing human resources among the young generations.
	Somchit Amnatsan (Thailand)	Director, Regional Irrigation Office 2, Royal Irrigation Department	
	Keoduangchai Keokhamphui (Lao PDR)	Head of Department, Faculty of Water Resource, National University of Laos	

Underlined: Lead Principal Investigator

Appendix 2: Abstracts of the new projects – Environment (Climate Change Impact on Natural and Human Systems)

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Climate change and human health in Asia: current impacts, future risks, and health benefits of mitigation policies (Climate change and human health in Asia)	HASHIZUME Masahiro (Japan)	Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo	This research project aims to comprehensively assess the health burden attributed to climate and demographic change by developing the Asia Pacific Collaborative Network for Health Effects of Climate Change involving 14 countries/regions. Specifically, the Japanese team will lead networking with the Australian team and develop advanced statistical models to project excess mortality due to heat-related deaths and infectious diseases. The Australian team will lead the collection of health outcome data and estimate the overall health burden in the Asian region. The Thai team will collect health and climate data and estimate the health burden in the country. The three countries' teams will work closely to develop a comprehensive multi-country database, which is expected to be widely used for assessing health burden and for
	Yuming Guo (Australia)	Associate Professor/Head, Climate, Air Quality Research Unit、 Public Health and Preventive Medicine, Monash University	

	Kraichat Tantrakarnapa (Thailand)	Associate Professor, Faculty of Tropical Medicine, Social and Environmental Medicine, Mahidol University	exploring effective adaptation measures in Asian countries.

Underlined: Lead Principal Investigator

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Climate change resilience of indigenous socio-ecological systems (RISE)	Garcia Molinos Jorge (Japan)	Associate Professor, Arctic Research Center, Hokkaido University	This research project aims at understanding the impacts of future climate change on traditional food systems and their consequences for dependent socio-ecological systems in indigenous communities of Thailand (the Karen community) and Siberia (the Yakut community and others). To do so, we will use a cross disciplinary approach that combines socioeconomic and nutritional surveys of our target indigenous communities with ecological models projecting changes in traditional food species under future climate change. Specifically, the Japanese research team will conduct a combined analysis of ecological models and general economic assessment, as well as be responsible for the overall research project coordination. The Thai and Russian teams will perform on-site nutritional and socioeconomic surveys and their data analysis. Through collaborative, complementary research and shared expertise among three participating countries, RISE is expected to provide a comprehensive understanding about the future impacts of climate change on the life of indigenous peoples through changes in the local ecosystems they traditionally depend on.
	Tuyara Gavrilyeva (Russia)	Research Professor, Institute of Engineering & Technology, North-Eastern Federal University	
	Wantanee Kriengsinyos (Thailand)	Associate Professor, Institute of Nutrition, Mahidol University	

Underlined: Lead Principal Investigato

Project Title	Principal Investigators	Position and Institution	Abstract of Research Project
Integration of traditional and modern bioproduction systems for a sustainable and resilient future under climate and ecosystem changes (ITMoB)	SAITO Osamu (Japan)	Princilal Policy Researcher Institute for Global Environmental Strategies	This research project aims to explore scenarios/pathways for a sustainable and resilient future under climate and ecosystem changes by focusing on integration of traditional and modern bioproduction systems such as home garden, agroforestry, plantation, aquaculture, and urban agriculture in Japan, Philippines, and Indonesia. The project will assess various ecosystem services provided by the bioproduction systems under multiple future scenarios. The Japan team will lead scenario analysis and modelling of climate change, land use and population, while the Philippine and Indonesia teams will lead field surveys in each country's study sites to run various models. The project's research is expected to result in (a) national and subnational policies and strategies to promote bioproduction systems that are resilient to climate and ecosystem changes; (b) contributions to national and local assessments of ecosystem services; and (c) a sustainable platform for capacity development and a network of researchers, especially for early career researchers.
	Juan Pulhin (Philippines)	Professor College of Forestry and Natural Resources, Department of Social Forestry and Forest Governance (DSFFG) University of the Philippines Los Baños	
	Pampang Parikesit (Indonesia)	Professor, Biology, Universitas Padjadjaran Bandung	

Underlined: Lead Principal Investigator

Appendix 3: The funding agencies which joined the call

Advanced Interdisciplinary Research towards Innovation (Water Resource Management)

Country Name	Funding Agency Name
Japan	Japan Science and Technology Agency (JST)
Indonesia	Ministry of Research and Technology/ National Research and Innovation Agency (RISTEK/BRIN)
Lao PDR	Ministry of Science and Technology (MOST)
Philippines	Department of Science and Technology (DOST)
Thailand	Agricultural Research Development Agency (ARDA)
Vietnam	Ministry of Science and Technology (MOST)

Environment (Climate Change Impact on Natural and Human Systems)

Country Name	Funding Agency Name
Japan	Japan Science and Technology Agency (JST)
Australia	National Health and Medical Research Council (NHMRC)
Indonesia	Ministry of Research and Technology/ National Research and Innovation Agency (RISTEK/BRIN)
Lao PDR	Ministry of Science and Technology (MOST)
Philippines	Department of Science and Technology (DOST)
Russia	Russian Foundation for Basic Research (RFBR)
Thailand	National Science and Technology Development Agency (NSTDA)
Thailand	National Research Council of Thailand (NRCT)

National Health and Medical Research Council (NHMRC), Australia
https://www.nhmrc.gov.au/

Ministry of Research and Technology/ National Research and Innovation Agency (RISTEK/BRIN), Indonesia
URL: http://international.ristekdikti.go.id/

Ministry of Science and Technology (MOST), Lao PDR
URL: https://www.most.gov.la/index.php/en

Department of Science and Technology (DOST), Philippines
URL: http://pcieerd.dost.gov.ph/

http://www.pcaarrd.dost.gov.ph/

Russian Foundation for Basic Research (RFBR), Russia
URL: http://www.rfbr.ru/rffi/eng/

Agricultural Research Development Agency (ARDA), Thailand
URL: http://www.arda.or.th/en/

National Science and Technology Development Agency (NSTDA), Thailand
URL: https://www.nstda.or.th/en/index.php

National Research Council of Thailand (NRCT), Thailand
URL: http://en.nrct.go.th/en/home.aspx

Ministry of Science and Technology (MOST), Vietnam
URL: https://www.most.gov.vn/en/Pages/home.aspx

Appendix 4: Experts for evaluation (JST)

Advanced Interdisciplinary Research towards Innovation (Water Resource Management)

Member Name	Position and Institution	Note
TAKEDA Haruo	Corporate Chief Engineer, Hitachi, Ltd.	Program Officer
ARAMAKI Toshiya	Professor, Toyo University	Advisor
IIDA Toshiaki	Associate Professor, The University of Tokyo	Advisor
INOI Hiroto	Associate Professor, University of Toyama	Advisor

Environment (Climate Change Impact on Natural and Human Systems)

Member Name	Position and Institution	Note
HIJIOKA Yasuaki	Deputy Director, Center for Climate Change Adaptation, National Institute for Environmental Studies	Program Officer
SAKURAI Gen	Senior Researcher, National Agriculture and Food Research Organization	Advisor
TAKAHASHI Kiyoshi	Deputy Director, Center for Climate Change Adaptation, National Institute for Environmental Studies	Advisor
MIMURA Nobuo	Specially Appointed Professor, Ibaraki University	Advisor
YOKOSAWA Masayuki	Professor, Waseda University	Advisor

Annex: Abstract of the joint call for proposals

(1) Proposal field application requirements:

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 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.