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 \sim Japan Science and Technology Agency and

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Environment / Energy (Global-scale Environment

Environment / Energy (Carbon Neutrality)

Bioresources

Disaster Prevention and Mitigation

Infectious Diseases Control

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Greetings







Japan Science and Technology Agency (JST)

President **HASHIMOTO Kazuhito**

Japan Agency for Medical Research and Development (AMED)

President **MISHIMA** Yoshinao

Japan International Cooperation Agency (JICA) President

TANAKA Akihiko

SATREPS is a joint research program between Japan and developing countries that aims to find solutions to issues of a global scale, such as global warming, bio-resources, natural disasters, and infectious diseases. It is part of Japan's "science and technology diplomacy" collaboratively pursued by the science and technology sector and the diplomatic sector to promote mutual development. Global issues become more and more complex every year, and they tend to hit developing countries particularly hard. They have gone beyond the stage where they can be solved by any single country alone. Their solutions will require international innovations and research outcomes in science and technology to be fed back into the community, as well as the development of human resources and upgrading of research capabilities.

In September 2015, the United Nations Sustainable Development Summit was held at U.N. headquarters. This Summit culminated in the adoption of the Sustainable Development Goals (SDGs), a collection of goals for the international community to work together to achieve by 2030. The SDGs are an important guideline for the elimination of poverty and the realization of sustainable growth by 2030. They emphasize the importance of global partnerships among all parties working to achieve them. The intention of SATREPS is to contribute to the international community as it aims to achieve sustainable development through the SDGs, by having researchers from Japan and developing countries work together on issues, creating new knowledge and technologies based on local needs, which can be put to use in the actual community.

JST, AMED and JICA will continue to engage in global issues together with developing countries and, by building strong bonds of trust, pursue the creation of new values in science and technology.

~ Japan Science and Technology Agency and Sustainable Development Goals ~

The 2030 Agenda for Sustainable Development, consisting of 17 Sustainable Development Goals (SDGs) and 169 targets, was unanimously adopted by the United Nations General Assembly on September 2015. The SDGs encompass challenges that affect all of humanity and our planet. For Japan, the resolution of these issues is closely linked to the realization of Society 5.0 and the Fourth Industrial Revolution described in the Fifth Science and Technology Basic Plan, which is one of Japan's growth strategies. They are also the basic principles of Japan's contribution to developing nations and the international community at large.

In June 2016 the United Nations held for the first time a forum focused on how science, technology and innovation (STI) can help achieve the SDGs. There are strong expectations that STI can provide the scientific grounding for tackling various challenges concerning sustainability that humanity faces today and for making better policy decisions.

To enable STI to help realize the SDGs, it is vital to ensure collaboration among all the diverse stakeholders, such as government agencies, universities, research centers, non-government organizations, and business enterprises. The Japan Science and Technology Agency will take advantage of all its many functionsincluding think tank, research and development, collaboration with industry and academia, people development, and science communication-to contribute actively to SDG initiatives in Japan.

SUSTAINABLE GOALS







• : Countries/regions where the project is being implemented

 \P : Countries/regions where projects have been implemented (in the past)

Distribution of research areas of the projects: Global-scale Environmental Issues Carbon Neutrality

Bioresources Disaster Prevention and Mitigation Infectious Diseases Control

* SATREPS projects in the field of Infectious Diseases Control have been transferred to AMED - the Japan Agency for Medical Research and Development. (On April 1, 2015.)

* Total number of projects carried out under SATREPS since its inception in 2008

19

Oceania

Total

projects may be less than the sums of the number of projects in individual regions/research areas in the table.

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15



Argentina
El Salvador
Colombia
Chile
Panama

Brazil	
Peru	
Bolivia	
Mexico	

18

P	ro	ie	orts	

Tojects					
	Disaster Prevention and Mitigation	Infectious Diseases Control	Total	Projects*	
	6	6	41	108	
	1	1	2	4	
	-	-	5	8	
	2	4	19	51	
	3	-	8	28	
	1	-	1	3	
	13	11	76	202	

* Ongoing projects involving more than one partner country are included in the count for each region involved, but only counted as a single project in the totals. Consequently, the totals given for the number of ongoing

-SATREPS and Science & Technology Diplomacy-

Science & Technology becomes a resource for diplomacy



KOTANI Motoko SATREPS Program Director

Executive Vice President, Tohoku University Specialties: Mathematics, Geometry, Discrete Geometric Analysis

Why "Science & Technology Diplomacy" ?

In 2008, when the SATREPS program was launched, people from the Cabinet Office, the Ministry of Education, Culture, Sports, Science, and Technology (MEXT), the Ministry of Foreign Affairs, and other agencies put together a policy for "Science and Technology Diplomacy" that could utilize a broad range of Japan's science and technology as a resource for diplomacy. As you can see from the large number of Nobel Prizes awarded to Japanese researchers in comparison with other Asian countries, Japan is very strong in science and technology, but our framework for actively contributing to science and technology in developing countries

Today, the Sustainable Development Goals (SDGs)s are a focus of worldwide attention, requiring the urgent resolution of challenges including climate change, food security, natural disaster mitigation, and infectious diseases, as well as international collaboration toward their solutions. The SATREPS program contributes to the SDGs by advancing and supporting joint research between Japan and developing countries with the aim of tackling these global challenges. The most important feature of this program, which is also part of Japan's official development assistance (ODA), is that it not only aims at making significant scientific findings, but also creates a clear path for the utilization of these findings in society, both in partner countries and elsewhere, on an ongoing basis after projects are complete. SATREPS is a shining example of Japan's hands-on science and technology diplomacy and a valuable component of our foreign policy.

still has room for further improvement. In terms of bilateral agreements for scientific and technological collaboration, Japan has signed fewer accords with developing countries than have other advanced nations. I am convinced of the importance of Japan's greatly expanding this science and technology diplomacy as a policy for creating good relationships with developing countries, by using science and technology to meet their expectations.

What role does SATREPS play in science & technology diplomacy?

SATREPS is a program that supports international joint research between Japan and

developing countries by adding a government science and technology budget allocation to the existing overseas development assistance (ODA) budget. Japanese researchers and those from developing countries work as equals in joint studies to tackle global challenges for which international collaboration is required. The SATREPS program aims not only to help resolve such global issues, but also to train young researchers who are capable of working internationally, generate innovation through the acquisition of new knowledge and skills, and ensure that the outcomes of this research can make a lasting contribution to society in the partner country.

SATREPS : Science and Technology Research Partnership for Sustainable Development

SATREPS is a Japanese government program that promotes international joint research. The program is structured as a collaboration Among the Japan Science and Technology Agency (JST) and the Japan Agency for Medical Research and Development (AMED), which provides competitive research funds for science and technology projects, and the Japan International Cooperation Agency (JICA), which provides development assistance (ODA). Based on the needs of developing countries, the program aims to address global issues*1 and lead to research outcomes of practical benefit to both local and global society^{*2}.

tion. Examples include energy/environment issues, disaster risk reduction, infectious disease control, and food security. newly obtained knowledge and technology to enhance government services or to develop products that can be deployed in

*1 Global issues: Issues that affect more than a single country or region, and cannot be resolved without international collabora-² Utilization of research outcomes: The research projects should lead to future social and economic benefits, achieved by using the market

International Cooperation to Address Global Issues, Advance Science, Develop Capacity

1. International Cooperation

Enhancing international cooperation in science and technology between Japan and developing countries

2. Addressing Global Issues and Advancing Science Acquiring new knowledge and technology that lead to the resolution of global issues and the advance of science and technology, and through this process, creating innovations

3. Capacity Development

Boosting self-reliant research and development capacity in developing countries through international joint research, constructing sustainable research systems that can contribute to resolving issues, coordinating networking between researchers, and training future human resources in developing countries and in Japan

Utilize Research Outcomes

SATREPS joins and coordinates functions, activities, and capabilities that were once separate, using scientific research potential as a mediator for developmental diplomacy

Science and Technology Promoting science and technology, encouraging innovation

Meeting Global Needs

Resolving global issues and contributing to the science and technology community

Japan's Capabilities

 World-leading technology, proven research capacity Soft power



Science and Technology





Top: Botswana project (Low Carbon/Energy, FY201 Bottom: Bolivia project (Bioresources, FY2010



Oussouby SACKO Member of the program committee

The SATREPS program of partnerships in projects needed to address global challenges

Our planet faces a number of issues that affect its future. In addition to population concerns, food crises, life-threatening risks, infectious diseases, and education issues in Africa, Asia, and other areas of the world. We face natural disasters and, environmental and energy issues caused by human activity that have a global impact. Tackling these challenges requires strong collaborative partnerships between research institutions across the world. The SATREPS program is a Japan-led initiative in which researchers from Japan and partner countries

collaborate directly with each other on research and development, increasing international technological and research capacities. Moreover, SATREPS projects enable the next generation of researchers to learn from each other and grow together as they work to develop the approaches and innovations required for solving global issues. There is an African proverb that says, "If you want to go fast, go alone; if you want to go far, go together." Pooling our strengths through the SATREPS program gives us a platform through which we can work together to tackle the issues facing the "commons" that is our planet.

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International Cooperation ODA, development assistance

Meeting Local Needs

Capacity development to address issues emerging as local needs in developing countries

Developing Countries' Capabilities

- Direct experience, knowledge, and data needed for research on global issues
- · Potential to contribute to the global economy through new markets and industries

Research Fields

SATREPS projects typically share the following characteristics:

- To envisage their outcomes being applied to the benefit of broader society as well as in the developing country
- To cover topics in developing countries for which research and development to resolve an issue is particularly necessary, and for which capacity building of researchers is required
- To contribute to the resolution of global issues and scientific and technological progress

* A project is not eligible if it consists merely of transfer of Japanese technology without entailing any joint research, or solely of surveys and other simple operations that do not make any contribution to the advancement of science and technology, or if it produces outcomes that can only be of benefit to one particular country.

Environment/Energy





This research area aims to resolve environmental and energy issues occurring on a global scale triggered by deterioration of ecosystems and biodiversity, increased pollution, concentration of urban population, increased production and consumption activities, and climate change.

- · Research on the observation, prediction, impact assessment, and adaptation to climate
- rch that contributes to assessing and predicting the abundance of water resources and improving safe, sustainable water resource management, utilization, and treatment (including proposals to strengthen the capacity of water utilities and improve service quality, and research concerning the reconciliation of conflicting
- interests pertaining to water resources and how to build consensus) Research on establishing a material-cycle society (including collection and reuse of waste and useful reso
- Research on the conservation and restoration of ecosystems and biodiversity on land and in the sea
- Research on urban environmental conservation (including greening) for the purpose of smart city construction, mitigation of environmental degradation as a result of urbanization, land use that contributes to climate change mitigation,
- and the construction and operation of urban plans Research on reconstruction and restoration of environments damaged by large-scale disasters(including the preservation
- Research on sustainable use of natural resources
- Research on chemical pollution, its risk reduction and



Co-create a carbon-neutral future

Research Supervisor NAKAIWA Masaru Global warming and climate change are already becoming real-life threats worldwide. The SATREPS program is facing up to this difficulty by funding the co-creation of

advanced technologies by Japan and emerging nations and promoting their social implementation. The projects currently underway around the world aim to utilize the characteristics of the countries and regions concerned in order to resolve global issues while combining carbon neutrality with economic development.





KAMIMOTO Masayuki

Research Supervisor SHIKAZONO Naoki



Carbon Neutrality This research area consists of energy conservation, promotion of the utilization of renewable energies, and research and development of smart society; research outcomes can potentially be utilized to cut greenhouse gas emissions and realize a carbon neutrality.

Research Supervisor

YAHARA Tetsukazu

citizen organizations.

Examples of eligible research projects

• Studies of the introduction and validation of social systems contributing to the realization of lowcarbon societies and green transformation (GX) in developing countries, such as carbon pricing and energy transition • Research on renewable energy, such as sunlight and solar heat, wind power, ocean energy,geothermal energy, and biomass. • Research promoting the use of renewable energy through the generation and utilization of carbon recycling, green hydrogen, blue hydrogen, ammonia, methane and other substances for the purpose of contributing to decarbonization • Research on energy conservation in industrial processes and elsewhere Research utilizing digital technologies to create sustainable, resource-recycling cities and communities in forms such as smart cities, smart communities, smart agriculture, transport networks, and next-generation infrastructure Component technologies related to carbon capture, usage, and storage (CCUS) and negative emissions • Research contributing to reducing greenhouse gas emissions from non-energy sources, such as CH4, N2O, and HFCs Research contributing to sustainable aviation fuel (SAF).

Promote socially imple-

environmental problems

Global environmental issues such as climate change and biodiversity

loss remain serious concerns. SATREPS emphasizes the implementa-

tion of research results to provide solutions to these issues through

continuous monitoring, assessment, and the development of systems

for the application of new technologies. We promote socially-imple-

mented research in collaboration not only with researchers in partner

countries, but also with government agencies, business sectors, and

esearch Superviso

ΤΔΚΔΜΠΡΔ

ukar

mented science to help solve

Research Supervisor

YAMAGUCHI

Yasushi

synthetic fuel for use in transportation machinery, and reducing carbon gas emissions in the transport sector field

* Each of the Research Supervisors has overall responsibility for research in a specific research area. He or she joins external experts on the screening committee, a committee that decides on candidates for SATREPS projects (including candidates for conditional selection). After projects have been approved, the Research Supervisors handles the research management for his or her research area by coordinating the research plans of the individual research projects, exchanging ideas and views with principal investigators, giving advice concerning the research, conducting project evaluations, and by other means as necessary.

Bioresources

Bioresources provide us with foods, medicines, animal feeds, textiles, energy, and much more, but sustainable production is threatened recently by problems such as desertification, salinization of agricultural land, pests, unstable temperatures, and unreliable rainfall. This research area concentrates on collaborative research that can point the way to sustainable means of production and utilization.

Examples of eligible research

- Research and development contributing to the sustainable production and utilization of bioresources (including resource management, breeding, cultivation, propagation and culturing technology for plant, animal, marine and microbial resources, roduction/distribution systems)
- Research contributing to the evaluation and effective utilization of bioresources. including unutilized resources (including using biodiversity for discovery, identification, and production of valuable substances derived from biological res urces but excluding human drug development)
- Research on improving the environmental settings for bioresources (including the prevention of damage to agricultural crops and livestock, and the creation and improvement of green infrastructure) Research contributing to mitigating the effects of climate change on the production of biologi

Use disaster prevention Research Supervisor

science and technology to

IGUCHI Masato

achieve the SDGs

Natural disasters have many causes, but in

recent years climate change and the complexification of society have made disaster prevention and mitigation measures more difficult. Achieving the SDGs is not an easy task, but science and technology are an important key to resolving these issues. Projects in the SATREPS Disaster Prevention and Mitigation research area are conducting research and development into the science and technology required for this unceasing effort and implementing the results in society in collaboration with developing countries.





Infectious Diseases Control

People and goods now cross national borders so frequently that the threats of HIV/AIDS, malaria, Dengue fever, tuberculosis, highly pathogenic influenza, Ebola hemorrhagic fever, COVID-19 and other emerging and reemerging infectious diseases are not confined to developing countries. Japan is keen to boost international cooperation regarding infectious diseases that have the potential to enter Japan, in order to accumulate knowledge in advance of any actual outbreak.

Examples of eligible research projects

 Zoonosis such as avian influenza, rabies and others • Epidemiology, diagnostics, vaccines and therapeutics for the detection and control of emerging and re-emerging infectious diseases including HIV/AIDS, Ebola hemorrhagic fever, protozoa and parasites like malaria, Dengue fever, tuberculosis and bacteria resistant to antibiotics like carbapenem and colistin

SATREPS projects in the field of Infectious Diseases Contro have been transferred to AMED - the Japan Agency for Medical Research and Devel (The transfer took place on April 1, 2015. Projects that finished before that date were not transferred.)

Build capacity to counter infectious diseases around the world!



Bioresources contributing to the SDGs

For the conservation and effective utilization of global bioresources that are essential for our future, it is important to strengthen and expand development cooperation, particularly

Research Supervisor IRIE Kenji

Research Supervisor

NAGAMINE Tsukasa

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with regard to human resources. We call for research and development on production, utilization, and management of bioresources crucial to SDGs initiatives through international collaborative research, taking into account the distribution of benefits to countries of origin.



Disaster Prevention and Mitigation

To realize safe, resilient and sustainable cities and society, this research area will engage in comprehensive and systematic research, within a global framework on prevention and mitigation of natural disasters as well as increasingly serious large-scale disasters caused by urbanization, leveraging the experience and knowledge accumulated in Japan.

Research on clarifying the mechanisms and prediction of disasters associated with natural phenomena such as earthquakes, tsunami, volcanic eruptions, storms, storm surges, inundation, drought, heat waves, and landslides, together with prevention and mitigation measures to prevent such disaster risks and damage from becoming more large-scale, as well as measures for resto-ration and reconstruction, and research on effectiveness of investment in disaster risk reduction Research on understanding the relationships between climate change and large-scale natural disasters and measures for adapting to damage thought to be caused by climate change Research on identifying the mechanisms whereby large-scale natural disasters that are exacer-bated by urbanization (such as urban flooding caused by localized heavy rainfall, sea level rise, or ground subsidence; earthquake damage and associated fire damage in regions with vulnerable buildings and urban fabrics; and damage to lifelines, transport networks, and other social infrastructure) become widespread, and on damage mitigation strategies. Research contributing to the prevention and mitigation of regional and urban disasters through the prompt collection and effective utilization of disaster information (including the deve of technologies to utilize disaster observation satellites, remote sensing,

UAV, GIS, GNSS, ICT, IoT, Big Data, AI, and other digital technologies) Research on building national resilience to create and maintain disasterresistant, resilient communities, land use planning and urban design, and improvements to social infrastructure and its sustainable operation Research for the prevention of, mitigation of, and recovery from disasters that



combines approaches across the natural sciences, humanities, and social sciences to help establish precise and practical disaster forecasting and enable effective recover Research on disaster countermeasures prompted by the occurrence of the COVID-19 pandemi and improving overall social resilience

Unless prompt and effective countermeasures are taken, infectious diseases can flash around the world, as demonstrated by outbreaks of Program Superviso SARS, novel flu virus infection (H1N1pdm), Ebola hemorrhagic fever, WATANABE Haruo and COVID-19. Therefore, it is important to strengthen each coun-

try's ability to quickly recognize signs of an outbreak, and to build each country's capacity for taking appropriate measures, such as tracking of outbreak trends, diagnosis, treatment, and prevention. SATREPS helps the world cope with infectious diseases by using science and technology cultivated by Japanese universities and research institutes in research collaborations that benefit all countries around the world.









Program Officer TOKUNAGA Katsushi

The Cooperation among JST, AMED and JICA

Competitive Research Funds/ODA Technical Cooperation Projects

Overall research and development management of the international joint research is handled jointly by JST and AMED, both of which have expertise in funding research projects at research institutions in Japan, and JICA, which has expertise in technical cooperation in developing countries.

It is expected that the promotion of international joint research activities under this program will enable Japanese research institutions to conduct research more effectively in fields and targets where it is advantageous to implement the research in developing countries. Meanwhile, it is hoped that for research institutions in the developing countries (primarily universities and research institutions focusing on activities for public benefit, but excluding those related to military affairs), the establishment of research center facilities and the development of human resources through joint research activities will make it possible to develop self-reliant, sustainable research systems.

IST and AMED will provide financial support to the Japanese research institutions for the project activities in Japan and JICA will provide financial support to the research institutions in the ODA recipient countries within the framework of technical cooperation projects*.

* As JICA supports the partner country with ODA under the technical cooperation framework, the country is required to depend on its own efforts. Consequently, the local institution's costs incurred for the project (labor cost, office rent, consumables by local researchers. operation and maintenance of equipment provided, domestic transportation fees for local researchers, conference attendance allowances, and other miscellaneous costs) should in principle be covered by its own country.

SATREPS Project Scheme

Research fields

Environment/Energy, Bioresources, Disaster Prevention and Mitigation, Infectious Diseases Control

 SATREPS projects in the field of Infectious Diseases Control have been transferred to – the Japan Agency for Medical Research and Development (AMED). (The transfer took place on April 1, 2015. Projects that finished before that date were not transferred)

- Duration of research
- 3-5 years
- Countries covered by SATREPS ODA 'Technical Cooperation Projects'

receiving countries

Project budget

Approx. 100 million yen/year for one project (JST: 35 million yen/AMED: 32 million yen (JICA: 60 million yen)

Ref. Application Guideline https://www.jst.go.jp/global/english/koubo.html



SATREPS Project Step

Project Progress



Applications of Research Proposals and ODA Technical Cooperation

JST and AMED invite researchers at universities and research institutes in Japan to submit research proposals in specific research areas. While JST and AMED select proposals, requests are received from developing countries for ODA technical cooperation for the international joint research, and Ministry of Foreign Affairs(MOFA) reviews these requests in conjunction with JICA in Japan. Therefore, it is essential for the Principal Investigator(PI) in Japan to coordinate with researchers in the ODA recipient country in order to confirm the details of the joint research when making an application to JST and AMED. Official requests for ODA technical cooperation must be submitted by the research institution in the recipient country to MOFA by the specified deadline, via the ministry or agency in the recipient country responsible for ODA and the local Japanese embassy.

Selection of SATREPS Projects (Provisional)

The selection process for research projects at JST / AMED and the screening process for ODA technical cooperation at MOFA / JICA are interlinked. The applications submitted to JST/AMED by the Japanese PI and to MOFA (local Japanese embassy) for ODA technical cooperation must be provisionally selected in order for the research project to be supported under the program.

Preparation for an International Joint Research Project

To implement the international joint research, a Record of Discussions (R/D) must be signed by the research counterpart(s) in the developing country and JICA to confirm that they agree on the details of the ODA technical cooperation. In addition, a Memorandum of Understanding (MOU) or similar document about the joint research must also be signed between the research institutions (parties concerned) in Japan and the ODA recipient country.

Evaluation by JST, AMED and JICA

Projects are reviewed by JST, AMED, and JICA, acting in collaboration. JST/AMED evaluate the whole of the international joint research project, both in Japan and in the developing country, from the perspective of the project outcome benefiting society by contributing to the resolution of global issues, and from the perspective of the project advancing science and technology. JICA evaluates the joint activities of the PI and other researchers including the counterpart research institutions' researchers from an ODA project perspective, confirming that the project has contributed to developing human resources and enhancing capacity in the developing country, and has contributed to the developing country's needs.

^{*} Provisionally selected: At this stage, discussion of details with the counterpart research institution or circumstances in the developing country may still result in small modifications to the project name or description, a shorter project term, or even termination of a newly-selected research project. For that reason, the project is described as provisionally selected.

SATREPS 2024 **SATREPS** Topics







Prof. ISHIZUKA Mayumi



Graduate School of Veterinary Medicine, Hokkaido University



Vice Chancello The University of Zambia

Advantage of Joint Research

In addition to the research benefit of being able to elucidate the toxicological impact etc. of types of environmental pollution not seen in Japan today, this project provides the opportunity to train students and young researchers, and has the potential to produce outcomes that enhance Japan's presence in Africa by contributing to the alleviation of environmental pollution.

In addition to the project's potential to remediate the environment and restore human and animal health by working through cross-disciplinary research activities including the elucidation of lead contamination mechanisms and risks, the development of environmental remediation techniques, the implementation of educational activities to prevent future contamination, and the visualization of economic losses, etc., it is training human resources through the joint research process.

Research Field



Mining is the driver of Zambia's economic growth, but it is increasing the severity of hazardous metal contamination in humans and in livestock, and of environmental contamination triggered by the development of mining. There are strong hopes that anti-contamination measures will provide a solution, but the extent of contamination had not been

elucidated, and in this situation, government policies to combat contamination remain undecided.





Research Institution in Zambia University of Zambia Research Institution in Japan:

Adoption Fiscal Year: FY 2015

Country: Republic of Zambia

- Hokkaido University Research Period: 5 years

Reference data: https://www.jst.go.jp/global/english/kadai/h2701_zambia.html

Visualization of Impact and Geo-Ecological

of Chronic/Latent Chemical Hazard Remediation



Water and soil pollution, along with high levels of lead contamination in human and animal bodies had been found in the area around the Kabwe mine in the Zambian Central Province. However, the contamination mechanism had not been identified, and the specific effects on human health and the socioeconomic impact were still unclear. This project brought together experts in multiple fields to provide a composite approach by 1) explicating contamination mechanisms, 2) assessing health risk and economic risk, and 3) developing environmental remediation techniques, in order to produce real solutions to the issues of pollution and the serious risk to health.



During the project period, the project exchanged memoranda with international agencies working on environmental remediation and medical support. As a result, research expertise and statistical data on lead contamination obtained by the project has become part of the scientific basis behind the medical and environmental remediation activities. Furthermore, assessments of health and economic impact, along with effective environmental remediation technologies etc. obtained by the project will eventually be submitted to the Zambian government in the form of proposals for countermeasures. They will raise awareness of environmental pollution in Africa, leading potentially to solutions for the issues.

Background to SATREPS research proposal

Hokkaido University and the University of Zambia have a relation-

ship that dates back some 37 years (as of 2020). When Professor

Ishizuka visited the University of Zambia in 2007, she was invited,

Young researcher's comments

I have been stationed long-

term in Zambia, working on

field research and liaison with



Preparing for formal approval of the proj-

A large number of Zambian government agencies are

involved in the project, so it took some time to reach

ect

Visualization of Impact of Chronic/Latent Chemical Hazard and Geo-Ecological Remediation



After the

research

period

Press and publicity activities

In July 2016 and October-November 2018, the Japanese media carried a substantial number of reports outlining the project and describing the contamination issue in Kabwe. In Zambia, major newspapers carried articles in December 2018, and the project was given news coverage on the national broadcasting network in August 2019.

In addition to informing the press, we are constantly working to communicate what can be done about lead contamination. Wearing masks and washing hands is an effective measure against contamination by lead dust as well as against infection, so we created an educational video about masks and hand-washing. With help from the Japanese embassy, the video was distributed to provinces throughout Zambia by the Zambian government.

5th year

The final JCC **Terminal Evaluation**

Partner country principal investigator's comments

In the KAMPAI project, we assessed lead exposure levels of residents, including women and children, in matrices such as blood and urine. Survey results showed clearly that lead levels have an impact on the surrounding environment and on the human body.

We also worked with the Kabwe Municipal Council and Ministry of Health to communicate this new information and to raise the level of interest and awareness of the problem of lead among the residents and local health workers.

In order to be able to propose effective measures, the project will continue to participate in lead contamination impact surveys and environmental remediation activities.

SATREPS 2024 **SATREPS** Topics



Indonesia has a population of over 200 million, and a massive demand for electricity. Decarbonization is a national policy objective, and the country hopes to make use of geothermal energy as a renewable energy source associated with Indonesia's large number of active volcanoes. One difficulty with this approach has been the requirement for large-scale test drilling to find locations underground that have an abundance of geo-



thermal energy resources. Such drilling involves a large initial investment and has a high risk of failure, and as a result, geothermal power generation did not grow as ast as originally expected.

, wind or solar



- Adoption Fiscal Year; FY2014
- Country: Republic of Indonesia
- Research Institution in Indonesia: Insitut Teknologi Bandung (ITB)
- Research Institution in Japan: Kyoto University
- Research Period: 5 Years
- Reference data: https://www.jst.go.jp/global/kadai/h2601_indonesia.html

Technology Development of Steam-spot Detection and Sustainable Resource Use for Large Enhancement of Geothermal Power Generation in Indonesia





Technology developed for precise identification helps cut initial costs

Identifying locations suitable for geothermal energy production usually requires deep drilling, incurring high initial costs. Moreover, test drilling sometimes fails, and the combination of high initial costs and large operating risk meant that new exploration had not made much progress. This project combined remote sensing techniques with geochemistry and mineralogy techniques to develop technology that could identify optimal locations (steam spots) for geothermal energy production with greater precision. The aim was for technology that cut both initial costs and operating risk, thereby contributing to the progress of geothermal exploration in Indonesia.



Optimization systems help ensure long-term use of geothermal energy

The project developed technology for precisely identifying optimal locations (steam spots) for geothermal energy production. This reduces the number of exploratory drillings required, which can cut initial costs. The project also developed environmental monitoring technology that enables use of geothermal energy in harmony with the environment, and optimization systems that help to ensure that the geothermal energy can continue to be used in the long term. These technologies make it possible to increase the proportion of Indonesia's energy provided by geothermal energy sources, which can help to meet the country's expected growth in demand for energy, and can potentially help to achieve large cuts in carbon dioxide emissions.

Background to SATREPS research proposal

Professor Koike already had strong links with Institut Teknologi Bandung (ITB) in resources engineering and earth science, and four of the teaching staff at ITB gained their doctorates under Prof. Koike. The first collaborative research began in 2004 with a geostatistical assessment project of coal resources, and the relationship has grown since then, including collaboration in conference organization and jointly-authored papers. After hearing that a proposal from the same department as Prof. Koike in Kyoto University had been selected as a SATREPS project, this joint research project was planned and proposed, aiming to deepen a joint research on sustainable energy, and to boost the strength of research at ITB through an initiative taking a comprehensive approach to geothermal energy research

Equipment provision

As part of the project we deployed twelve different types of stateof-the-art measurement/analysis equipment, including scanning electron microscope and chromatographs and three types of

software. These are in full use. In addition to their use by ITB, they handle requests for analysis from other entities, including universities and research institutes throughout Indonesia, and police and customs agencies. Costs of consumables and maintenance are secured by ITB, and the instruments are kept ready for use at all times.

Analyzing soil gases with the new equip



Training human resources in partner country

In order to train people to handle geothermal exploration in Indonesia, a broad range of training is provided, including inviting over ten Indonesian trainees to Japan each year, including ITB gradstudents, uate young researchers, and young private sector engineers. In addition to classroom learning, trainees get practical training through field surveys in Oita Prefecture, practice analyzing samples, and give presentations of their results.



Practical training through field surveys and analyzing samples



lapanese and Indonesian principals signing

Award ceremony at ITP

achieve the outcomes on time.





Private sector collaboration

Tie-ups with a number of companies in the partner country led to jointly-conducted field survey results being published in international journals, and to locations pinpointed by the project being adopted as new drilling sites. During the project, we were also able to extend the research to other districts, providing additional sites for verifying the accuracy of steam spot detection, and making it easier to implement our research outcomes in society. Japan-side companies also helped us to resolve a number of problems concerning geothermal energy exploration and cooperated in numerical simulations, etc.

5th year



The final JCC **Terminal Evaluation**



vide a foundation for further joint research with Egypt, Mozambique, and other countries.

Partner country principal investigator's comments

The aim of the BAGUS project was to reduce costs and reduce the risk of failed exploration in order to realize relatively inexpensive but precise technology meeting the needs of geothermal resource exploration in Indonesia.

By means such as introducing state-ofthe-art experimental equipment and software, the activities of the BAGUS project have led to the development of science and technology, the enhancement of exploration techniques, and of course, training of ITB people. The people who have been trained are now working as engineers or as university teaching and research staff in the field of geothermal energy.







"Natural rubber seeds", the unlimited potential hiding in natural rubber plantations







Prof Suwabun Chirachanchai The Petroleum and Petrochemical College, Chulalongkorn University

Principal Investigato

📿= Establishing Sustainable Water Supply System Resilient to the Contamination of Drinking Water Sources =

From grossly contaminated river water to drinking water!

Reduce the startup and operational costs of advanced water purification by 80%!

River water is the main source of drinking water in Southeast Asia, including Vietnam, but increasing pollution means regular treatment methods cannot guarantee its safety. The high startup costs and operational costs of advanced water treatment methods capable of removing these pollutants prevent their widespread use in developing countries. In this project, we are developing an advanced water treatment method that is cheap, uses very little energy, and uses locally procurable components, as well as water quality measurement technology to enable online water safety monitoring.

Sustainable water supply for residents and industry



Research Period

This project will expand the use of advanced water treatment in waterusing facilities (purification plants, commercial buildings, and industries using industrial water) in developing countries, benefiting society by providing a sustainable supply of safe, cheap water to residents and industry. It will also help promote production by Japanese companies and organizations in those regions by supplying them with low-cost thoroughly treated water

Display for monitoring the operational
status of all the water purification
pidnis in ridipilong city

Hai Phong Water Joint Stock Company / Thuy Loi University / Hanol Architectural University / Vietnam Water Supply and Sewerage Association / Ministry of Construction / DNP Water The University of Kitakyushu / Ryukoku University / National Institute of Advanced Industrial Science and Technology / Kyoto University / Kyowakiden Industry Co., Ltd. / Kyowakiden Vietnam Co., Ltd. / Fuso Corporation / Mitsubishi Chemical Aqua Solutions Co., Ltd. 5 Years Research Institutions in Japan

2 = Development of Easy-operation High-tech Analytical Devices and Human Resource for Food Safety and Environmental Quality Control = 6

Toward resolving environmental pollution through technology and personnel capable of on-site analysis!



Develop device technology and personnel capable of analyzing water and air quality on-site

In Vietnam, analysis systems in analysis laboratories cost time, money, and labor and are often unable to deal with environmental issues, creating a bottleneck. We are therefore developing microflow device technology, electrochemical detection technology, and monitoring technology to enable on-site air and water analysis. In collaboration with the Vietnamese Ministry of Natural Resources and Environment, we are also developing a certification system for qualified analysts and training analysis personnel as well as engaging with big data science in order to establish an on-site analysis system.

Resolving environmental problems by closing up the mesh

of environmental analysis Our aim is to help resolve Vietnam's environmental issues by developing an on-site analysis system capable of a large volume of environmental analysis on a daily basis, both contributing to the sustainable development of the country, which is undergoing rapid economic growth, and encourage networking between personnel in industry and academia in Japan and Vietnam. Extending this model to other developing countries will also contribute to resolving global environmental issues.

Research Institutions in Vietnam	VNU University of Science / Ministry of Natural Resources and E
	Bac Ninh Department of Natural Resources and Environment (D
Research Institutions in Japan	Waseda University / The University of Tokyo / DKK-TOA CORPO
Research Period	5 Years



Utilization of the highly potential of natural rubber seeds: from collection to thorough utilization

Against the backdrop of environmental issues such as global warming and marine debris, Thailand is aiming for sustainable economic development under the BCG (Bio-Circular-Green) economy model, which aims to achieve carbon neutral society and to reduce economic disparities among industries by utilizing renewable resources and resource recycling. Therefore, a partnership between Japan and Thailand establishes a sustainable biomass procurement system, develop green products, and build a value chain for social implementation by utilization of natural rubber seeds, still an untapped biomass resource in the natural rubber industry.

Creating social impact through the added value of natural rubber seeds

Creation of a new biomass industry by reviewing the value of natural rubber seeds and building a value chain. The value of the seeds will lead to higher profits for producers and a reduction in economic disparities between industries. In addition, the expanded use of the green products making from rubber seeds can contribute to mitigating social problems related to the environment and resource depletion.



Chulalongkorn University / Kasetsart University / Walailak University / Thailand National Science and Technology Development Agency (NSTDA) Research Institutions in Thailand Development Agency (NSTDA) Tokyo University of Agriculture and Technology / Osaka Metropolitan University / Kyoto Institute of Technology / University of Tokyo / Nippon Institute of Technology / Japan International Research Center for Agricultural Sciences (JIRCAS) Research Institutions in Japan **Research** Period 5 Years

= Risk-based Participatory WASH Planning and Citizen-data WASH Statistics for African Peri-urban Settlements =

Experienced, not taught - Realizing safe water, sanitation and hygiene in Africa







Participative visualization of diarrhea risk to design your own WASH plan

Cholera outbreaks sporadically occur in low-income areas of peri-urban Lusaka, the capital of Zambia. People own cell phones but not sanitary lavatories. Water, sanitation and hygiene are not simply an issue of money, but of prioritization. Supported by an app to be developed under the project, residents themselves will examine the contamination around them and visualize the risk of diarrhea. By "experiencing" potential risks rather than

"being taught" about these, residents will be better able to design their own remedial measures and implement them proactively.

The prevention of diarrhea and cholera in African urban slums with poor sanitation

By having residents design risk-based improvement plans by themselves and practicing improvement activities based on their actual experience, contamination of water and food and outbreaks of diarrhea and cholera can be prevented, leading to the realization of a healthier and more hygienic way of life. The project will create a new type of practical science to solve serious social problems by combining citizen science with advanced science.

Research Institutions in Zambia University of Zambia / Lusaka City Council - Department of Public Health / Lusaka Water Supply and Sanitation Company Research Institutions in Japan Kyoto University / Tohoku University / Hokkaido Universit Research Period 5 Years







Principal Investigat Dr. Kawawa Banda Senior Lecturer, Integrated Water Resource Management Centre, University of



urs by the time it is co







Principal Investigate

FUJIOKA Takahiro Graduate School of Engineering, Nagasaki University



Principal Investigato Associate Prof. TRAN Thi Viet Nga Faculty of Environmental Engineering Hanoi University of Civil Engineering









Prof. MAWATARI Kazuma Graduate School of Information Production and Systems, Waseda Iniversity



Principal Investigator Director / Prof. Noi Nauven Van Key Laboratory of Advanced Materials for Green Growth, VNU







= Development of Palm Oil Mill Effluent (POME) Treatment System for Sustainable Energy Production and Resource Recovery based on Material Innovation =

Recover water, electric power, and mineral resources from palm oil mill effluent!





Materials innovation plus methane fermentation/ electricity generation/photosynthesis equals resource recovery water treatment

Malaysia is the world's second largest producer of palm oil, but milling effluent has been shown to cause water pollution. In this project, we are developing a system to use milling effluent to produce methane gas, recover electric power by using microbial fuel cells, and collect nutrient salts by photosynthesis, as well as manufacturing reclaimed water from the treated water. By encouraging or sup-

pressing the microbial reactions in each process, and by developing materials that increase the capacity to isolate the substances concerned, we will establish a highly efficient water treatment process for resource recovery.

Turning effluent treatment into a resource recycling system to create new value

Transforming conventional energy-consuming water treatment into a resourcerecycling process will not only resolve water pollution issues but also greatly reduce greenhouse gases, improving the sustainability of palm oil production. This will be an important model case as a form of environmental infrastructure for the fuel production created by carbon fixation from widespread photosynthesis.



Research Institutions in Malaysia Universiti Teknologi Malaysia / Malaysia Palm Oil Board / Tenaga National / Berhad Research / National Hydraulic Institute of Malaysia Research Institutions in Japan Nagoya Institute of Technology / Kyoto University **Research Period** 5 Years

= Strengthening Tropical Forest Resilience Based on Management and Utilization of Genetic Resources Capable of Climate Change Adaptation =

Tackling climate change issues by selecting and planting resilient forestry seedlings!

Utilize genomic data to select tree species that are highly resilient to climate change

In this study, we are focusing on six tree species that are suitable for tropical forest regeneration and social forestry (community-based forest management), using genomic information (the sequence of bases in DNA) to select exceptional individual trees that exhibit greater resistance to climate change, and establishing the technology for the mass production of samplings from these exceptional trees by means such as cell culture. We are evaluating the effect of this in promoting forestry with greater resilience to climate change by assessing the amount of timber produced and ecological functions (including greenhouse gas absorption and the amount of non-timber resources) from the viewpoints of local communities and the local economy, in order to ascertain the necessity and value of forestry promotion in scientific terms.

Making tropical forestry a sustainable industry even under climate change



Research Institutions in Indonesia

Research Institutions in Janan

Research Period

We will create international and regional incentives for afforestation designed to cope with climate change, and improve the current forestry industry to enable the sustainable use of forest resources even under climate change. Going forward, this will lead to the development of environmentally, economically, and socially sustainable forest management models using saplings highly adapted to climate change, which will encourage climate change adaptation and mitigation



tropical forests in the partner country

Universitas Gadjah Mada/ National Research and Innovation Agency Japan International Research Center for Agricultural Sciences (JIRCAS) / Sumitomo Forestry Co., Ltd. / University of Tsukuba / Forestry Research and Management Organization (FRMO) / Nagasaki University / National Institute for Environmental Studies (NIES) / Kansai University Young teak trees that wi produce high-quality timber, v cultivation on the fo

Principal Investigato Associate Prof. YOSHIDA Naoko Graduate School of Engineering, Nagova Institute of Technology



Principal Investigato Vice-Chancellor Prof. Datuk Ir Ts Dr Ahmad Fauzi Ismail Universiti Teknologi Malavsi

Prof Dr TANI Naoki

Agricultural Sciences (JIRCAS)

Principal Investigato

Na'iem

Prof. Dr. Ir. Mohammad

Professor, Faculty of Forestry

Senior Researcher, Forestry Division.

Japan International Research Center fo

problems in Cambodia! Observation, analysis then countermeasures

Cambodia =

Establish an air monitoring network for the state of art science of air pollution and a framework for human resource development

Air pollution in Cambodia has been becoming a critical issue due to a rapid economic growth that leads to increasing air pollutant emissions from various sources such as traffic, constructions and open burning of waste and agricultural residues. However, there is a serious lack of human resources capable of evaluating and managing this situation based on a scientific understanding. In this project, under the collaboration with the Institute of Technology of Cambodia (ITC) and the Ministry of Environment, Cambodia (MoE) as well as other related organizations, a platform that consists of an air monitoring network and research facilities, a self-reliant and sustainable structure for capacity building and provision of reliable environmental information to be used for environmental policy making will be established.



Developed human resources will contribute to the clean air in Cambodia.

Through all activities of the project, not only officers and engineers who can skillfully manage the monitoring network but also young researchers who can take initiatives in cutting-edge researches on atmospheric science and engineering will be developed. Reliable environmental data will be shared by people in Cambodia and utilized to proposals for environmental policies for the mitigation of health risk.



Institute of Technology of Cambodia / University of Health Sciences / National University of Management / Ministry of Environment Kanazawa University / Nagasaki University / Osaka Metropolitan University / Osaka Ohtani University 5 Years

8 Innovation of Science and Technology on Natural Rubber for Global Carbon Process =

Time to switch from fossil-fuel-derived materials to those made from sustainable natural rubber!

Refinement of protein-free natural rubber, its product development, and biodegradation technology for resource recycling

This study focuses on natural rubber, with the aim of laving new industrial foundations with this sustainable biological resource. We are starting out by developing technology for the mass production of natural rubber materials from which the natural rubber proteins, which are the cause of allergies and diminished performance, have been removed. We will then work toward the development of automobile tires and rubber products for medical use from these protein-free natural rubber materials, technology for the biodegradation of natural rubber products, and environmentally friendly wastewater treatment technology, which overall will reduce global warming.



the science of natural rubber This project aims to strengthen intellectual property related to protein-free natural rubber and promote its international standardization, creating a natural rubber industry to replace conventional synthetic rubber. We are also aiming to create environmental preservation industries related to the resource recycling of natural rubber. Transforming society through the use of materials derived

from natural rubber will also reduce global warming.



26

= Establishment of Risk Management Platform for Air Pollution in

Develop human resources to solve air pollution





Prof. FURUUCHI Masami Faculty of Geosciences and Civil Engineering, Institute of Science and Engineering, Kanazawa University











Reducing global warming by creating a world based on



Collecting natural rubber (field latex) from a Hevea rubber tree



Making a water/natural resources recycling device for



Hanoi University of Science and Technology Nagaoka University of Technology / Tottori University of Environmental Studies / National Institute of Technology, Tokyo College / National Institute of Technology, Numazu College/ National Institute for Environmental Studies / Sumitomo Rubber Industries, Ltd./ Sumitomo Riko Company Ltd. / Shiraishi Calcium Kaisha, Ltd. / Shiraishi Central Laboratories Co., Ltd. / National Institute of Technology (KOSEN), Kure College. 5 Years



The kickoff meeting of the SATREPS project for air pollution in Cambodic (ITC, 19, Sep. 2022)

Prof YAMAGUCHI Takashi

Graduate School of Engineering

Nagaoka University of Technolog



Director of Center for Rubber Science and Technology, Hanoi University of Science and Technology

= Development of Innovative Climate Resilient Technologies for Monitoring and Controlling of Water Use Efficiency and Impact of Salinization on Crop Productivity and Livelihood in Aral Sea Region =

Selection of crops for circular halophytes mixed farming (CHMF) and utilization of

Achieve sustainable agriculture through active use of real-time data and halophytes!

Years of irrigation-based agriculture have shrunk the Aral Sea, and salt damage and

drought are becoming increasingly severe in the surrounding area. This project is

designed to use climate data and information from earth observation satellites to grasp

conditions in the area around the Aral Sea: the amount of usable water resources, the

amount of evapotranspiration, and the status of crop growth. In addition, we will work

to prevent the worsening of salinity problems by developing a sustainable agricultural

model that combines appropriate irrigation drainage management methods, halo-

phyte-based biological restoration of saline soil, and cultivation of crop species that

0 333 15 E.





Principal Investigator Director, Xabibullaev Baxitjan Sagidullaevich nternational innovation Center for Aral Sea basin (IICAS) under the Ministry of

heep eating a feed mixture

ng halophytes

Disaster Prevention Research Institute

ecology, environmental protection and climate change of the Republic of

= Formation of a Center of Excellence for Marine Plastic Pollution Studies in the Southeast Asian Seas =

Discover how plastic wastes are released into the oceans and clarify their impact on the ocean environment

Researching ways in which plastic wastes are released into the oceans and the impact of marine plastic debris on the ocean environment

The Southeast Asian region is thought to be a hotspot for marine plastic pollution. However, the influence of marine plastic on the ecosystem and human activity is not yet sufficiently clear. This project establishes a research center in Thailand to survey the ways in which plastic wastes are released into the oceans and the impact of the debris on the ocean environment. It also aims to monitor the routes of marine plastic debris from land to the ocean and the volume of plastic emitted, and to forecast future levels of marine microplastic emissions.



Research Period

Proposing an action plan for mitigating marine plastic debris to the Thai government

Research Institutions in Thailand Chulalongkorn University / Eastern Asia University / Walailak University / Ministry of Natural Resources and Environment Kyusyu University / Tokyo University of Marine Science and Technology / Kagoshima University / Kumamoto University / Kyoto University / Tokyo Research Institutions in Japan University of Agriculture and Technology / Chuo University / Public Works Research Institute Civil Engineering Research Institute for Cold Region 5 Years

= Development of Management Systems for Multiple Utilization of Biodiversity in the Tropical Rainforests at the Protected Areas in Sarawak =

Reveal the full scale of biodiversity in Sarawak's tropical rainforests

Building a system for assessing and utilizing tropical rainforest biodiversity

Using cutting-edge technology such as DNA barcoding, this project conducts an exhaustive survey of the distribution and state of conservation of the diverse life forms inhabiting the tropical rainforests that cover much of Sarawak. It builds data archives that store the results, creating research infrastructure for the study of biodiversity in Sarawak. It formulates education programs and community engagement programs, raises awareness among local residents regarding the value of intellectual resources regarding biodiversity, and contributes to training in scientific skills.

Enhancing multifaceted utilization and management of tropical rainforest biodiversity



Research Period

This project will aid in the creation of policy proposals for the multifaceted utilization and management of tropical rainforest biodiversity based on information accumulated in data archives. It will also organize the latest information on biodiversity and provide information based on the various needs of local communities, including those of the tourist and biotech industries and scientific and environmental education.

wak's tropica rainforests, home to rich biodiversity (Lambir Hills National Park)



Research Institutions in Malaysia Forest Department Sarawak / Sarawak Forestry Corporation / Sarawak Research Institutions in Japan



from the Alhagi family

real-time data

use water efficiently.

Development of a circular business model for managing agricultural land, water, and salt

We will explore and propose optimal combinations of crop species from the standpoints of resistance to drought and salt, ability to remove salt from soil, and efficient use of water, in order to realize resource-efficient, sustainable agriculture through irrigation and drainage management based on the amount of water resources

available, the amount of evapotranspiration taking place and the status of crop growth, and through active cultivation of halophytes in salinity-affected areas.

Research Institutions in Uzbekistan Research Institutions in Japan Research Period

International Innovation Center for Aral Sea Basin / Uzbek Hydrometeorology Institute / Tashkent Institute of Irrigation and Agricultural Mechanization Engineers / National University of Uzbekistan / Uzbek Design Research Institute / Nukus Branch of Tashkent Agrarian University Kyoto University / Kobe University / Chiba University / Mie University / The University of Kitakyushu/Tottori University 5 Years

= Establishment of Integrated Forest Management System Model for Conservation of Mountain Forest Ecosystems in the Andean-Amazon =



Solve the challenges facing the Andean-Amazon region by sustainable forest management

Develop forest management systems that support the conservation and use of forest ecosystem services

There are concerns about deterioration of ecosystem functions in mountain forest ecosystems from the Andes Mountains to the Amazon Basin as a result of disturbances caused by human activities and a lack of water resources due to climate change. Through understanding the effects of increasing forest fires and logging as well as understanding the amount of water resources available for supply, we aim to develop a forest management system that enables local residents to recieve ecosystem services while conserving the forest, and to apply that system in a way that benefits society by creating tools to support decision-making for use in management of water and forest resources by local residents.



Achieve sustainable conservation and use of mountain forest ecosystems through participation by local residents



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Develop an integrated forest management system that makes it possible to present forest allocation that balance the resource usage needs of residents with the conservation of ecosystems. We anticipate that the use of this system will encourage local residents to conserve the fragile forest ecosystems of the Andean-Amazon region and to use ecosystem services in a sustainable fashion.





Forest Research and Management Organization, Forestry and Forest Products Research Institute



Prof. Zoila Aurora Cruz Burga



Faculty of Forest Sciences, La Molina National Agrarian University





Measuring soi

Re-employed Research HIRATA Yasumasa











Prof. ISOBE Atsuhiko Center for Oceanic and Atmospheri Research, Research Institute for Applied Mechanics, Kvusvu Universitv



Principal Investigato Prof. Voranop Vivakarr Aquatic Resources Research Institute Chulalongkorn University

Marine plastic debris washed ashor on Samaesan Island, site of the surve

The project will support Thailand's government in formulating a policy for reducing marine plastics based on scientific knowledge. It will also roll out the initiative in Thailand to other surrounding nations and contribute to sustainable reduction of marine plastics in Southeast Asia. Among other things, this research center is expected to play a role in demonstrating the scientific basis for bolstering policies for reducing marine plastics.







Prof ITIOKA Takao Graquate School of Global nvironmental Studies, Kyoto Universi

rincipal Investigato Ms. Runi Sylvester Pungga

Department Sarawal

Senior Assistant Director, Forest



diversity for forest science students (Lambir Hills National Park)







= Establishment of a Sustainable Community Development Model based on Integrated Natural Resource Management Systems in Lake Malawi National Park =

Create sustainable futures by integrating practices by people in local communities with interdisciplinary science

Improving sustainability of the natural environment and resources through integrated natural resource management

The life and livelihood of people in rural villages of Malawi, which is among the least developed countries, depends on the diverse natural resources supported by the country's rich natural environment. By integrating the latest in resource management sciences and effective initiatives based on the traditional knowledge and skills of local communities through transdisciplinary research,* this project takes adaptive approaches to improving and rein-

grated resource management systems that takes advantage of synergies emerging from integration.

of diverse stakeholders, including scientists and innovative practitioners both within and outside local communities.

management systems

forcing the management systems of diverse resources that have been handled separately up until now, and builds inte-

* Transdisciplinary research is adaptive processes of co-production of knowledge, driven by repeated trials and feedbacks with close collaboration

the project is expected to contribute to improving the quality of life

Improve people's lives and well-being with integrated resource

This project will build integrated management systems of diverse resources supported by

the rich natural environment through collaboration between practitioners in local commu-

nities and scientists, and establish a framework for effective decision makings and actions

led by community members to achieve sustainable natural resource management Thereby,

net) widely used on





Bosco Rusuwa Dept. of Biological Sciences, Faculty of Science, University of Malawi Chancellor College

Small irrigation channe made in the fields of

A PERMI

hoping for fish gather

the village head

5 = Advanced and Sustainable Methods on Water Utilization Associated with Greening Potential Evaluation -

Create sustainable agropastoral practices in the Diibouti desert through developmental management of water resources

Assessing water resources/greening potential and demonstrating agropastoral practices

Most of Djibouti is a harsh desert environment, and the country's food self-sufficiency ratio is only about 13 percent by value. This project aims to ascertain the distribution, circulation pathways, and sustainable usage levels of Djibouti's water resources over a wide area and from a three-dimensional perspective, and expand the area where agropastoral practices are used. Satellite images and UAV images taken throughout Djibouti are used to assess the current situation based on the relationship between water resources and greening potential/sheep farming potential. The project also aims to propose water-saving agropastoral models as an extension of the oasis farming model by developing useful plants and feed crops, along with greening through effective use of urban waste.

Making efficient use of water resources to enhance arid areas by greening wasteland and by creating agropastoral land



use of sustainable agropastoral practices suitable for arid lands by conducting demonstrations at suitable locations. The process involves determining the circulation of water in Djibouti as a whole, and, by extension, groundwater flow systems throughout Africa, and identifying other arid lands with potential for implementation of the techniques



University of Malawi Chancellor College / Lilongwe University of Agriculture and Natural Resources / Department of Fisheries / Department of National Parks and Wildlife Ehime University / The university of Jokyo / Diversity of Agriculture / Ryukoku University / Yokohama National University / Saga University Research Institutions in Malawi Research Institutions in Japan **Research** Period 5 Years

and well-being of people.

= Sustainable Replantation of Oil Palm by Adding Value to Oil Palm Trunk through Scientific and Technological Innovation =

Stop disorderly expansion! Utilize oil palm trunks for sustainable plantations



the wood of choice for smoking

fishery products



Develop technology that utilizes palm trunks to resolve oil palm plantation issues

Malaysia produces approximately 30% of the world's palm oil. Oil palm trunks (OPT), trunks from palm trees that are felled at the end of their economic life, are left on plantations, causing issues that include the spread of soil-borne diseases, greenhouse gas emissions from decomposition, and deforestation as tropical forest is cleared to make way for new plantations. This project is conducting scientific and economic assessments of the impact of OPT abandonment, and attempts to transform OPT into a more valuable resource by developing technology for producing a range of high-value-added products, including biogas and biodegradable materials

Sustainable plantation management and creation of new industries through OPT technology

This project is based on collaboration between industry, government, and academia in Malaysia and Japan. It aims to raise the resource value of oil palm trunks and create new industries by developing technologies that utilize OPT to produce high-value-added products. This contributes to the achievement of sustainable palm plantation management by facilitating the removal and use of felled OPT and making replantation possible within existing palm plantations.



 Research Institutions in Malaysia
 Universiti Sains Malaysia (USM) / Malaysian Palm Oil Board (MPOB) / Forest Research Institute Malaysia (FRIM) / Standard and Industrial Research Institute of Malaysia (SIRIM) Japan International Research Center for Agricultural Sciences (JIRCAS) / IHI Corporation /Hiroshima University / National Institute for Environmental Studies / Panasonic Corporation / NISSIN SHOJI CO., LTD. 5 Years



*



KOSUGI Akihiko Biological Resources and Post-harvest ion, Japan International Research Center for Agricultural Sciences (JIRCAS)





School of Biological Sciences, Universiti Sains Malavsia (USM)

A facility set up in Malaysia nonstrating technology for utilizing oil palm trunks. Fauipped with bioac uction/power generation and wat nent facilities, it produces high-qua OPT pellets and other high-value-addee products from OPT with



30





SATREPS 2024 Environment/Energy (Carbon Neutrality)







SATREPS 2024 Environment/Energy (Carbon Neutrality

Using water management to

Development of a water management system to reduce

In the Asia-Monsoon region, which includes Cambodia, methane emitted from

rice paddies is a major source of greenhouse gas (GHG) emissions. It is known

that methane emissions from paddy fields can be reduced by introducing

intermittent irrigation, such as alternate wetting and drying (AWD), but little

verification has been conducted over large areas of paddy fields. This project

reducing rice paddy yields, and a method for monitoring and evaluating GHG reductions.

methane emissions from rice paddies over a large area



rincinal Investigato Project Leader IZUMI Taro

> Rural Development Division Japan International Research Center for Agricultural Sciences



Acting Head of Departmen Mr. Thav Sopheak Faculty of Forestry Science Roval University of Agriculture

Principal Investiga



he official logo for RiceGX-SATREPS project



= Development of Innovative Technologies for Efficient Generation of Green/ Blue Hydrogen for Realization of Carbon-neutral Society with Consideration of Industrial and Environmental Characteristics in the Region =

Establishing hydrogen production technologies that fully utilize everything from solar power to underground resources!

Development of hydrogen production technologies that make use of Uzbekistan's regional characteristics

To establish a foundation for turning Uzbekistan into a hydrogen society, the project will develop a blue hydrogen production technology that produces nothing but hydrogen through the underground conversion of oil remaining in the country's old oil fields into hydrogen while sequestering byproduct CO2 underground, a high-efficiency green hydrogen production technology that combines perovskite solar cells and steam electrolysis, and a new green hydrogen producing photocatalyst using metal slag.

Contributions to the building of a realistic and sustainable hydrogen

society using existing resources



resources easily procured in Uzbekistan, we will contribute to the building of a sustainable hydrogen society based on a stable hydrogen supply system. These technologies are expected to be deployed globally from Central Asian countries with similar regional characteristics as high quality technologies originating in Japan.



Q = Integrated Sustainable Energy and Food Production from Microalgae-based Carbon Capture and Utilization =

Healthy people, healthy world: Transforming CO₂ with microalgae



from microalgae

realistic policies.

Fixing CO₂ with microalgae to produce fermented foods and hydrogenbased fuel

Through the development of technologies for efficient CO₂ fixation by microalgae, for using microalgae to create high-value fermented foods, for generating green hydrogen from biomass, and for the mixed burning of biomass and hydrogen-based fuels with coal, will help reduce carbon emissions by coal-powered power plants and improve nutrition with fermented health foods.



Establishment of efficient water management, MRV, and methods to create incentives for farmers

The project will develop efficient water management methods from the watershed to the field level to implement intermittent irrigation over a large area, methods to measure, report, and verify (MRV) reductions in methane emissions, and methods to create incentives for farmers by utilizing carbon credits such as the Joint Crediting Mechanism (JCM) promoted by the Japanese government.





= Development of Integrated Bio-circular Economy from Food and Energy Estate Waste Fraction to Biofuel and Bio-chemicals =

= Development and Social Implementation of Greenhouse Gas Emission

Reduction Technologies in Paddy Fields of West Tonle Sap Lake by

will develop and socially implement a large area water management method that reduces methane emissions without

Creating a new chemical industry linked to **Indonesian agriculture!**

Putting agricultural residues to use by converting to fuel and

In Indonesia, where agriculture is thriving, a variety of crops such as pineapple, cas-

sava, and palm are grown on a large scale. As these crops are processed, residues

chemicals through the power of microorganisms







Sciences and Environment, National







Research Organization for Life

Research and Innovation Agency (BRIN)





of, this waste generates methane gas, contributing to global warming. This research aims to make effective use of these agricultural residues and convert them into biofuels and bio-chemicals through the power of micro-

organisms. This will lead to the creation of a new chemical industry linked to agriculture. Combating global warming by reducing agricultural residues from

large-scale agriculture

If agricultural waste is converted into biofuels and chemicals, the chemical industry, which until now has been dependent on fossil resources, can evolve into a new chemical industry linked to agriculture. If this industrial structure can be changed, it will have a great impact on the securing of resources in Japan's chemical industry and assist in combating global warming.

Aeetina on so

the Indonesia **Biofuel Counc**

ter discarded from a palm plantation

Research Institutions in Indonesia Research Institutions in Japan Research Period

of Technology / Lampung University / Padjadjaran University Kobe University / Japan International Research Center for Agricultural Sciences / The University of Shimane 5 Years National Research and Innovation Agency (BRIN) / Bandung Institute



SATREPS 2024 Environment/Energy (Carbon Neutrality)



Japan's and the world's CO2

20 = Development of New Ammonia Synthesis System using Renewable Energy and Hydrogen = Energy and Hydrogen =

From the world's strongest sunlight, making the cheapest ammonia to save Africa and Japan

production plant with the latest Japanese technology

Greening South Africa's coal production industry,

Japan. They may also be widely applicable in other countries.

providing fertilizer to the African continent, and reducing

We are using solar ammonia produced in western South Africa to green coal. The

ammonia can also be used to meet the shortage of fertilizer on the African conti-

nent. Japan has added ammonia to its new energies for use in place of coal-fired

power, and the fruits may contribute to the development of new technologies within

Support advances in South Africa's electrolysis technology by building a new ammonia

South Africa depends on coal from its eastern region for 70% of its domestic energy,

and also exports coal. Today, there are issues with how to green the coal and the

need for a new means of distribution as a consequence. Power generated from

renewable sources can only be used at the site where it is generated, and if it is

changed to hydrogen this is not cheap to transport. Converted to ammonia, however,

it can be transported worldwide. South Africa, which possesses cheap renewable

energy and abundant precious metals for use as catalysts, and Japan, with its high-

level chemical technologies, are cooperating to develop novel clean ammonia pro-

duction technology with the potential to be used worldwide.

-



Prof. AIKA Ken-ichi

National Institute of Technology



HvSA Infrastructure Centre of npetence. North-West Universit

Professor Aika delivering a lecture for HvSA Infrastru staff and student

Research Institutions in South Africa North-West University Research Institutions in Japan National Institute of Technology, Numazu College / Utsunomiya University / Chiba University / The University of Tokyo / Institute of Science Tokyo / Nagoya University / Kumamoto University **Research Period** 5 Years

= Development of a Decarbonized Heat Energy Supply System using Ground Heat Source =

Use ground heat in arid regions to tackle both energy access and global warming!

Provide sustainable heat energy with a ground-source heat pump designed for arid regions

Tajikistan has few hydrocarbon resources and is dependent on hydroelectric power for 96% of its energy, one of the highest rates in the world. However, it still faces issues with energy access. In the cold season, demand for heating increases, straining the electricity supply, and restrictions are imposed in rural areas. Since the Soviet period the country has used coal as an alternative, but these facilities have become dilapidated and their use, however tempting, is not ideal from the viewpoints of both air pollution and global warming. We are therefore developing an energy-saving, clean ground-source heat pump designed for use in arid regions.



Improving energy access and tackling global warming through the use of ground heat sources

Ground heat has not been utilized because of the low water table and poor soil water content. The development of a ground-source heat pump designed

for use in arid areas (Tajikistan model), will contribute to combating global warming and tackling energy access not just in Tajikistan but also in Afghanistan and other neighboring countries



he center uses shipping cor ranae of research. The new ammonia proc plant is also planned to be stored



Prof INAGAKI Fumiaki

Graduate School of International

rincipal Investigato Dr. Kodirov Anvar

Director, Center for innovative development of science and technologies of the Academy of ences of the Republic of Tajikista

Kickoff symposium at the Taiikistan Academy of Science (June 2022)



22 = Development of a Carbon Recycling System toward a Decarbonised Society by using Mineral Carbonation =

Absorb carbon dioxide by means of mineral carbonation, and clean up the environment at the same time



Develop a carbon recycling system using mineral carbonation as a step toward climate neutrality

The cement industry is taking various approaches to the reduction of CO2 emissions. Our approach is to focus on process-related CO₂ emissions that account for 60 percent of the industry's CO₂ emissions, and to develop a carbon recycling system based on performing mineral carbonation of alkaline by-products and waste materials. The resulting carbonates are recycled for use in cement production. Resources that cannot be recycled are used as environmental purification materials, thereby creating a new circulation loop

Use mineral carbonation to reduce carbon emissions, and contribute to the circular economy with environmental purification materials

We are advancing toward carbon neutrality by developing technologies with low CO2 marginal abatement costs for making equipment that can easily be procured, operated, and maintained by entities in developing countries. In addition, low-cost, useful products like environmental purification materials made from alkaline by-products and waste products are being developed, and it is expected that they will be used also for the treatment of acid mine drainage.

Research Period	5 Years
Research Institutions in Japan	Tohoku University / Seikei University / Fukuoka Institute of Teo
Research Institutions in South Africa	Cape Peninsula University of Technology / University of Cape Council for Geoscience

23 = Development of the Duckweed Holobiont Resource Values towards Thailand BCG Economy =

Discover the power of microbial symbiosis and help realize a resource-recycling society



Establish a holobiont resource research center to study combination of duckweed and coexisting microorganisms

Contribute to the construction of a sustainable society by utilizing plants in the Lemnaceae family (duckweeds), which have high resource value and can grow in contaminated water where there is a high concentration of CO2. Specifically, (1) create a biobank of complex organisms consisting of duckweed and coexisting microbes, (2) understand and enhance microbial symbiosis that accelerates the growth rate of duckweed, (3) develop low-carbon water treatment technologies and duckweed production technologies, (4)

manufacture biofuels, bioplastics, and livestock feeds, and (5) improve edible duckweed productivity and develop highly functional foods

Develop greenhouse gas reduction technologies and valuable resources ranging from duckweed foods to biofuel

Contribute to the Bio-Circular-Green (BCG) economic model being promoted by the Thai government and to carbon offsetting by simultaneously addressing everything from development of duckweed-based bioresources to the creation of new industries



Kasetsart University / Khon Kaen University / Chulalongkorn University / Mahidol University / Nakhon Pathom Rajabhat University / BIOTEC / NANOTEC / Advanced GreenFarm Hokkaido University / Vsyoto University / Oskaka University / Tohoku University / University / Oskaka University / Tohoku University / University / Saraya Co., Ltd. 6 Vore: Research Institutions in Thailand Research Institutions in Japan **Research Period**

Research Institutions in Tajikistan Center for innovative development of science and technologies of the Academy of Sciences of the Republic of Tajikistan (CIDSNT)/ Ministry of Energy and Water Resources / Ministry of Industry and New Technology / Ministry of Health and Social Protection / Dushanbe City Office. Akita University / Alst. University / Hokkaido University / Toyo University / Japan Groundwater Development Co., Ltd. / Zeneral Heatoump Industry Co Ltd. / EXEO Group, Inc / D.D.L. Co Ltd Research Period





Prof. IIZUKA Atsush Graduate School of Environm Studies, Tohoku University



Prof. Tunde Victor Ojumu Cape Peninsula University of Technology (CPUT)



Town / University of the Western Cape / chnology / Taiheiyo Cement Corporation



Principal Investigat

ntal pollution cau

acid mine drainage in South Africa

Prof MORIKAWA Masaaki Faculty of Environmental Earth Science



Principal Investigato Prof Arinthin THAMCHAIPENET Faculty of Science, Kasetsart University





24 = Development of Low-Carbon Affordable Apartments in the Hot-Humid Climate of Indonesia towards Paris Agreement 2030 =

Achieve comfortable living environment in Indonesia using affordable low-carbon technologies

Developing low-carbon technologies suitable to hot-humid regions with the aim of implementing them in society

Under the Paris Agreement signed in 2016, developing countries have targets for reducing greenhouse gas emissions. Securing healthy, comfortable housing is a priority in countries with insufficient living standards, but low-carbon targets have to be met as well - achieving both goals is not easy. Targeting high- and medium-high-rise apartment housing, which is becoming more prevalent in Indonesia, this project develops low-carbon construction technologies suitable to hot-humid regions. It aims to have the technologies incorporated into actual

buildings and into national standards and other legally-binding construction regulations.



Low-carbon apartment housing that can contribute to achieving Paris targets

By implementing both hardware and software aspects of comprehensive low-carbon technologies, this project will contribute to Indonesia for achieving its greenhouse gas reduction targets under the Paris Agreement through the application of low-carbon technologies in Indonesia's building sector. Subsequently, it will aim to expand research facilities in Indonesia and disseminate and share information with neighboring countries.

Directorate of Engineering Affairs for Human Settlements and Housing, Ministry of Public Works and Housing / City of Tegal / Agency for Mete Climatology and Geophysics (BMKG) / Bandung Institute of Technology (ITB) / Indonesia University of Education (UPI) / Sepuluh Nopember In Technology (ITS) / University of Brawijaya (UB) / University of Indonesia (UI) / The YKK AP R&D Center of Indonesia Hiroshima University / Institute of Science Tokyo / Kagoshima University / Shinshu University / Waseda University 5 Years Research Institutions in Indonesia Research Institutions in Japan Research Period

25 = Comprehensive Solutions for Optimum Development of Geothermal Systems in East African Rift Valley -

Resolve issues slowing use of the Great Rift Valley's geothermal resources



Prof. FUJIMITSU Yasuhiro Faculty of Engineering, Kyushu



Prof. Bernard W. IKUA Deputy Vice Chancellor, Jomo Kenyatta versity of Agriculture and Technology (JKUAT)



= Development of Advanced Hybrid Ocean Thermal Energy Conversion (OTEC) Technology for Low Carbon Society and Sustainable Energy System: First Experimental OTEC Plant of Malaysia =

Achieve sustainable power supplies using temperature differences in the ocean



vith UTM Vice Chancello in July 2019

Develop an OTEC Malaysia Model with an innovative hybrid ocean thermal energy conversion system at its core

This project will conduct a demonstration of an innovative hybrid ocean thermal energy conversion system (H-OTEC) in Malaysia, a nation that has great potential for ocean thermal energy conversion. The hybrid OTEC system can resolve issues seen with conventional systems such as the cost of heat exchangers and the need for anti-fouling measures. There are high expectations for the system's ability to desalinate seawater at the same time as generating energy. This project also aims to investigate the economic viability and construct models of systems that can utilize the deepwater raised by OTEC for other purposes in addition to power generation. Furthermore, the project is planning the utilization of research outcomes in society.

Making available new sources of clean power and safe water supplies

Deep ocean water utilized by hybrid OTEC has high added value, including nutritional value. Availability of deepwater can jumpstart the creation of new industries in areas such as farming and fishing, permitting the construction of a sustainable, low carbon Malaysia Model OTEC system that is advantageous to local industry in Malaysia. This model can then be rolled out to other parts of the world, including other Asian and Pacific Island countries

Research Institutions in Malaysia University of Technology, Malaysia(UTM) / University Putra Malaysia(UPM) / University of Malaya / University Kebangsaan Malaysia / University Malaysia Tere Research Institutions in Japan Saga University / The University of Tokyo / AIST **Research Period** 5 Years

Development and Dissemination of Innovative Oil-Extracting Technology from Crop Process Residue for Rural Electrification and Value Addition of By-products =

Utilize agricultural residues for rural electrification and achieving a low carbon society!



Develop technologies for extracting fuel oil from agricultural residues and efficiently using by-products

Rural areas in Tanzania have a low electrification rate, but demand is increasing for electric power to charge the growing number of mobile phones, and to provide lighting, enabling children who work on farms during the day to study at night. Many kinds of agricultural residue, such as rice bran, contain good-quality oil. This project will develop technology using CO2-expanded hexane to extract unique oils for power generation that are energy-saving and have a low environmental impact. It will also develop technology for producing high-value-added products from extraction residues.

Contributing to the supply of power in rural Tanzania by extracting oil from agricultural residues

This project aims to will contribute to the rural electrification of Tanzania using renewable energy and provide a model for achieving a sustainable, low carbon society. Generation of electricity using oil extracted from oil-bearing agricultural residues will provide power to rural areas. Manufacture of products such as soap from part of the extracted oil will also open the way towards employment and cash earnings in rural areas.

Research Institutions in Tanzania	University of Dar es Salaam / Sokoine University of Agriculture
Research Institutions in Japan	Shizuoka University / Central Research Institute of Electric
	Power Industry / Nihon University
Research Period	5 Years



Olkaria II geothermal power plant, the target field of this project

Solving issues to achieve optimum development of the Great Rift Valley's unique geothermal systems

Kenva is in the process of switching its main source of power from hydropower, which is unstable due to frequent droughts, to geothermal power, which has high power generation potential and enables stable supply. This project aims to resolve issues at every stage, from planning through to actual energy use, and promote sustainable geothermal energy use in Kenya and surrounding nations through the utilization of hybrid exploration geophysics, development of models of geothermal systems unique to the Great Rift Valley, and establishment of methods of dealing with scaling in order to improve the operational efficiency of power plants, as well as by proposing scenarios for improving acceptance of geothermal heat use by society.

Contributing to achieving SDGs by utilizing geothermal heat, a stable, renewable energy source

The outcome of this project is expected to contribute to achieving the Kenyan government's goal of increasing the capacity of geothermal power generation facilities to 5,000MW by 2030 as well as ır Olkaria II geoth contribute to the government's Kenya Vision 2030 economic development plan to turn The project prop Kenya into an industrial nation. Kenya's renewable energy based power generation on of heat as well a makeup will also contribute to global environmental conservation.



 Research Institutions in Kenya
 Jomo Kenyatta University of Agriculture and Technology (JKUAT) / University of Nairobi (UoN) / Kenya Electricity Generating Company Ltd. (KenGen) / Geothermal Development Company Ltd. (GDC)

 Research Institutions in Japan
 Kyusyu University / West Japan Engineering Consultants, Inc.

 Research Period
 5 Years
 Research Institutions in Japan Research Period



and Engineering, Hiroshima University Principal Investigato Dr. Muhammad Nur Fairi

Researcher, Directorate of Engineering

Housing, Ministry of Public Works and

Affairs for Human Settlements and

Alfata

Housing

vertical void inside

rincipal Investigato

Prof. KUBOTA Tetsu

Graduate School of Advanced Science

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Prof. IKEGAMI Yasuvuki Director, Institute of Ocean Energy, Saga University



Principal Investigator Prof. Dato' Ir Dr. A. Bakar Jaafar Ocean Thermal Energy Centre, University of Technology Malaysia (UTM)



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Principal Investigat Research Prof / Emeritus Prof. SAKO Takeshi

Energy System Section, Graduate School of Science and Technolog Shizuoka University



Principal Investiga Associate Prof Emrod Elisante

Department of Chemical and Mining Engineering, College of Engineering and Technology, University of Dar es







SATREPS 2024 Bioresources





Promoting the blue economy by utilizing seaweed resources!







Prof. Hari Eko IRIANTO Research Center for Marine and Land Bioindustry, National Research and Innovation Agency (BRIN)

Principal Investigate

Development of fundamental technologies to sustainably produce functional products using seaweed

In Indonesia - the world's second largest producer of commercial seaweed and a place where a variety of unutilized seaweed species can be found - there are high expectations for the sustainable and advanced utilization of seaweed resources. The project will develop and consolidate academic knowledge for the efficient and environmentally friendly production of high value-added functional products made from seaweed in the food industry and other fields. Advanced seaweed cultivation methods and processing technologies will be developed using the knowledge gained, as well as production base technologies for the industrial utilization of seaweed resources.

Promotion of the blue economy through the development of functional products using seaweed

A fundamental model for the advanced use of seaweed in Indonesia will be built that globally promotes sustainable marine economy activity, the "Blue Economy," by encouraging the multifaceted industrial use of seaweed resources through the development of a series of fundamental technologies from seaweed cultivation to processing and manufacturing of functional products, as well as through environmental impact assessments and economic analysis.

* Blue economy: Sustainable economic activity related to oceans and marine environments.



= Establishment of an Alert System for Fusarium oxysporum f. sp. cubense, the Banana and Plantain Wilt Pathogen, and Mitigation Strategy of the Disease =

Stop the invasion and spread of banana wilt from threatening the banana industry!

Propose a comprehensive package to control banana wilt with low environmental impact

We are proposing the following to local governments in the La Selva region of Peru as a comprehensive package to control banana wilt, a disease that causes crippling damage to bananas: (1) banana wilt diagnosis systems at the field and molecular levels; (2) obtaining banana lines that are resistant/resilient to banana wilt as a result of mutagenesis; (3) a disease-free sapling production/distribution system; (4) investigation of microbial ecosystems forming disease-suppressing soil; and (5) disease control methods with a low environmental impact, combining methods such as bio-pesticide.



Ensure stable banana production and help improve farmers' standard of living

In the banana-producing region of the Selva, Peru, personnel (technicians) are being trained to advise farmers on the basis of the comprehensive package to control banana wilt, which has been adopted as technology for widespread use and is being utilized by farmers. This is helping to improve the standard of living of small-scale farmers in the Selva.

nterview with farmers

and advisers in a small-scale

banana farm in the La Selva region of Peru

ing wilt in a banang field in the La Selva on of Peru has turned the leaves vellow and wilted. The inset at the bottom right shows how the vascular bundles have turned brown.

Research Institutions in Peru Besearch Institutions in Peru Research Institutions in Japan Tokyo University of Agriculture and Technology (TUAT) / Japan International Research Center for Agricultural Sciences (JIRCAS) / Tottori University (TU) 5 Years **Research Period**







Universidad Nacional Agraria La Molina

ation for shipping i all-scale banana farm





30 = Recovering High-Value Bioproducts for Sustainable Fisheries in Chile (ReBiS) =

Create a new industry by effectively recovering bioproducts from fisheries waste!

Establish the technology and manufacturing foundations for high-value bioproducts from fisheries processing waste

In Coquimbo, Chile, which has a flourishing fishing industry, 14,000 tons of fisheries waste from Humboldt squid, shrimp and langoustine processing is thrown away every year; however, this fisheries waste contains a large amount of high-value bioproducts. To utilize these discarded bioproducts, we are studying the substances that comprise these biomaterials in detail and establishing processes for their purification and manufacture. We are also working toward the development and application of novel biomaterials synthesized from fine bioproducts.

Establish a localized circular economy on fishery resources in Chile



Progress is being made in the assessment and identification of high-value bioproducts in fisheries waste, the establishment of manufacturing processes for fine bioproducts, the development of novel biomaterials, and enhanced networking with those involved in the supply chain for fine bioproduct manufacture, and the recovery of fisheries waste is being promoted by the development of a localized circular economy in Chile.

Research Institutions in Chile	University of La Serena / Universidad Católica del Norte
Research Institutions in Japan	Hokkaido University / National Institute of Technology, Tomakoma
	Hokkaido Research Organization / Hokkaido Soda Co., LTD.
Research Period	5 Years

= Breeding Innovation in Chili Pepper and Tomato to Accelerate Sustainable Vegetable Production in Tropical Regions =

Achieve sustainable vegetable production in tropical regions using advanced breeding technology!



creation of mutant noo



tropical regions of the world. creation of mutant pools t Universitas Padjadjara

Research Institutions in Indonesia Universitas Padiadiaran / National Research and Innovation Agency University of Tsukuba / Japan International Research Center for Agricultural Sciences (JIRCAS) / Miyaqi University 5 Years

other tropical regions of the world











Prof. Liliana Aragon Caballero (UNALM)









Principal Investiga Prof. ONODA Akira Faculty of Environmental Earth Science Hokkaido University



rincipal In Assoc. Prof. Bonny Martinez Department of Food Engineering University of La Serena

plan formulation at Lo

Sorona Univore









To ensure food security in preparation for rapid climate change, improve farm income, and promote public health, sustainable production and supply of vegetables is essential in tropical regions where rapid population growth and economic growth are expected in future. The project therefore aims to build an innovative breeding platform using advanced molecular breeding and genome editing technology that can rapidly develop heat tolerant tomatoes and disease resistant chili peppers in Indonesia, facing climate change in the tropical regions.

Contribution to sustainable vegetable production in Indonesia and

We will establish The Center of Advanced Breeding Technique (CAB-Tech) during the project as a core center for accelerating the vegetable breeding process as well as a basis for promoting the use of new cultivars. The CAB-Tech will enable to develop various vegetable

- cultivars suitable for tropical environments in the future. Using Indonesia as a
- model country, we will contribute to sustainable vegetable production in the







ncipal In Associate Prof KANG Seung Won Institute of Life and Environmental ences. University of Tsukuba



Principal Investigator Associate Prof. Nono Carsono Faculty of Agriculture, Universitas

A aroup photo after signing CRA

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Anther Culture and Citizen Science

variety development and dissemination that adapts to the local natural, social and economic conditions. By combining citizen science by active participation of farmers who are capable

innovator, anther culture and basic technology of breeding, we seek to create a system that

addresses the evolving needs of the local natural, social and economic conditions.

activities based on these breeding lines, contributing to poverty reduction in rural areas.

Building an Immediate Rice Variety Development System through

Similar to other Sub-Saharan African countries, Zambia has a majority of its population resid-

ing in rural areas, with a significant portion living in poverty. The country is experiencing a rapid

increase in rice demand, presenting an opportunity to enhance farm income through the

promotion of rice cultivation. In agricultural technology development, sustainability and align-

ment with the local natural, social and economic environment are

crucial. This research aims to establish a system for immediate rice

Contributing to the Establishment of a Short-Term Rice Breeding System in Africa

Collaboration Between Farmers and Scientists Enables Rapid Development and **Dissemination of Rice Varieties!**







Principal Investigate





in the world's most arsenic-polluted region!

Lay the foundations for breeding high nutritional value/low arsenic content rice and develop cultivation technology

Bangladesh is one of the world's leading growers and consumers of rice. This means that health damage caused by ingesting a poisonous element (arsenic) via rice consumption is a major social concern, as are deficiency diseases (hidden hunger) caused by the low levels of trace nutrients (iron and zinc) in rice. In this project, we are aiming to use breeding and water management technologies to establish technologies for the production of safe rice with a low arsenic content and rice with high nutritional value containing high levels of iron and zinc.

Making safe, healthy rice the norm!

Establishing technologies for breeding and cultivating safe, highly nutritious rice and encouraging their adoption in Bangladesh will improve the health of the population. The technologies obtained in the course of this project can also be used in other regions of the world facing similar problems



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Bangladesh Agricultural University (BAU) / Bangladesh Rice Research Institute (BRRI) Bangladesh Institute of Nuclear Agriculture (BINA) / Department of Agricultural Extension (DAE) The University of Tokyo / The National Agriculture and Food Research Organization (NARO) / Akita Prefectural University

35 = Establishment of Nitrogen-efficient Wheat Production Systems in Indo-Gangetic Plains by the Deployment of BNI-technology =

Using the power of plants to reduce fertilizer waste and create a healthier global nitrogen cycle!

Introduce BNI-enabled wheat varieties with improved nitrogen utilization to India



Almost half of the nitrogen fertilizer used in crop production is lost to the environment, which causes water pollution and contributes to global warming. In crops with the improved ability of biological nitrification inhibition (BNI), BNI substances secreted from the roots inhibit the nitrification process in the soil, which improves the nitrogen utilization rate and enables a high yield maintained with the application of less fertilizer. We are raising wheat varieties with high BNI function and introducing them into the wheat cultivation systems of the Indo-Gangetic plain in India, where large amounts of fertilizer are currently applied, and will evaluate their effectiveness from environmental and economic perspectives.

Reducing the amount of fertilizer has a double benefit to the local economy and the global environment.

The reduction in fertilizer use as a result of the introduction of BNI-enabled wheat varieties should have a positive effect not only on the wheat cultivators of the Indo-Gangetic plain but also on the Indian economy, which pays out large amounts in fertilizer subsidies. It should also decrease N2O gas emissions and nitrate leaching from agricultural land, creating a healthier global nitrogen cycle.



Borlaug Institute for South Asia (BISA) / Indian Institute of Wheat and Barley Research (IIWBR) / Indian Agricultural Research Institute (IARI) / Central Soil Salinity Research Institute (CSSRI) Japan International Research Center for Agricultural Sciences (JIRCAS) / Tottori University / National Agriculture and Food Research Organization (NARO) Research Institutions in India Research Institutions in Japan **Research Period**

Research Institutions in Zambia Zambia Agricultural Research Institute / University of Zambia Research Institutions in Japan Hokkaido University / University of Ryukyus/Tokyo University of Agriculture / Tohoku University / Rakuno Gakuen University / Japan International Research Center for Agricultural Sciences **Research Period** 5 Years

33 = Creation of Beef Value Chain by Optimizing Ruminal Microbiota and Grassland Management on Digital Platform =

Enabling sustainable beef production by eliciting the power of cattle and grasslands on a digital platform!

Develop smart livestock production technology using locally diverse livestock resources

In this study, we will provide smart livestock production technology to ranchers in Colombia, which has a competitive beef production industry, offering them a digital platform that small-scale farmers can use to increase their income to improve beef productivity in a tropical region with a dry season. Furthermore, we aim to utilize the genetic diversity of the ruminal microbiota and grassland diversity, which are closely linked to productivity, to enable the preservation and sustainable use of the pasture ecosystems where livestock is mainly let out to graze and to contribute to regional development through value-added livestock production



Creating a digital platform that contributes to beef production system optimization



A digital platform that provides traceability for Colombian beef will increase the productivity of local livestock communities and provide a digital certification of beef quality. Going forward, this will contribute to adopting the smart livestock regional model that supports the optimization of the beef production structure by utilizing regional characteristics.



Research Institutions in Colombia AGROSAVIA / FEDEGAN / CIAT Research Institutions in Japan Nagoya University / Chubu University Research Period 5 Years







Principal Investigate Dr. Lorena Aguayo Ulloa AGROSAVIA

cattle grazing in a

Consultation with rancher

n a Colombia

34 = Development of Breeding and Water Management Technologies for Safe and Nutritious Rice Production =

Enabling the production of safe, nutritious rice







Principal Investigat Associate Prof. KAMIYA Takehiro Graduate School of Agricultural and Life Sciences. The University of Tokyo



Prof. Md. Rafigul Islar Department of Soil Science. Bangladesh Agricultural Universit









Principal Investigator Dr. TOBITA Satoshi Specially Assigned Investigator Japan International Research Center fo Agricultural Sciences (JIRCAS)



Principal Investigate Dr. Arun Kumar Josh Managing Director of Borlaug Institut for South Asia (BISA)

@Science Manar





= Eco-engineering for Agricultural Revitalization Towards improvement of Human nutrition (EARTH): Water Hyacinth to Energy and Agricultural Crops =

Use aquatic plant biomass as a valuable resource, and solve ecosystem, social, and health problems all at once

Development of technologies for converting water hyacinth to

Utilizing remote sensing and AI technology, the project will develop a sustainable har-

vesting model for water hyacinth, which is partly choking Ethiopia's largest lake, Lake

Tana. The aim is to use methane fermentation treatment to recover energy and nutrients

from the harvested water hyacinth, use the recovered energy and nutrients for mass

cultivation of microalgae (spirulina) that are attracting attention as a superfood, and

develop nutritional supplements derived from spirulina together with local companies.

energy, nutrients and agricultural products



Aerial view of water th overgrowth on Lake Tana

(about 500 km² of overgrowth, o one sixth of the lake's surface)



Principal Investigato

for Sustainable Innovation. Faculty of Science and Engineering. Soka University



Assoc. Prof. Solomon Addisu Legesse College of Agriculture and Environmental Sciences, Bahir Dar University

Cultivating spirulina i

38 = Development of Novel Disease Management Systems for Banana and Cacao =

Bring new ideas to the fight against intractable banana and cacao crop diseases!



Development of new technological systems that control major diseases affecting bananas and cacao

Bananas and cacao are important crops for food security and economic development in developing countries, but they are subject to intractable diseases for which control methods have not been established. In order to rein in these diseases, we propose to introduce comprehensive disease control management systems by developing diagnostic kits and disease outbreak prediction apps, and by optimizing methods of biological soil disinfestation, fertilizer management and cultivation management. In addition, we intend to collect various fungi, including pathogens, from banana and cacao plantations, to construct a microbe library and make effective use of microbial resources.

Contribute to sustainable banana and cacao production by developing disease management systems

The Philippines is a major producer of bananas for export, and is also focusing on cacao production. By preventing diseases in these crops, which are both considered important crops throughout the world, and by achieving sustainable production, we aim to prevent economic losses stemming from decreased crop yields. In addition, we aim to help reduce environmental pollution and damage to the health of the local population resulting from improper application of agricultural chemicals.

Research Institutions in Philippines	Central Luzon State University (CLSU)
Research Institutions in Japan	Tamagawa University / Tokyo University of
	Agriculture and Technology
Research Period	5 Years

39 = Restoration of Pastureland by Effective Usage of Wild Forage Plants based on Traditional Knowledge of Nomadic Mongolians =

Boost the sustainability of Mongolian livestock farming using traditional knowledge of nomadic Mongolians

Using traditional knowledge of nomadic Mongolians to maintain the health of livestock and restore Mongolia's degraded grasslands

This project gathers the rich knowledge and oral traditions of nomadic Mongolians regarding Mongolian grassland flora's effectiveness in restoring livestock health and degraded grasslands, selects useful grassland flora, and scientifically demonstrates their usefulness by investigating the chemical compounds and new genes that give them their restorative effectiveness. It also preserves grasslands and livestock health using grassland flora that grows well and is effective in maintaining good health by 'diagnosing' exhausted Mongolian grasslands and 'treating' them by establishing and deploying methods of cultivation for the selected flora.

Improving livestock farming productivity through more extensive use of pasture that is resistant to climate change and maintains good health



This project will develop the pastoral livestock farming industry through restoration of degraded Mongolian grasslands that have been improved through the scientific use of traditional knowledge of nomadic Mongolians and the spread of grassland flora that improves the productivity of grasslands degraded by overgrazing and contributes to livestock health. The application of this methodology will contribute to the revitalization of nomadic pastoral industries facing similar issues around the world.

Research Institutions in Mongolia	National Unive Husbandry / In Food Agricult	
Research Institutions in Japan	The University	
Research Period	5 Years	

versity of Mongolia / Mongolian University of Life Sciences (Research Institute of Animal Institute of Veterinary Medicine (IVM) / Center for Ecosystem Studies (CES)) / Ministry of Iture and Light Industry / SHINE ANGIRT Co., Ltd / MONOS Group Company y of Tokyo / Kyoto University / Tohoku Medical and Pharmaceutical University / National nd Food Research Organization



Help improve health and nutrition in Ethiopia to address the wide-ranging issue of "hidden hunger"

We aim to build a sustainable water hyacinth management system using ICT, providing a model for approaches using water hyacinth to eventually solve ecosystem and social problems. In addition, the development of spirulina-derived dietary supplements and adoption of such supplements in Ethiopia will help to alleviate the country's health and nutrition problems.

Research Institutions in Ethiopia Bahir Dar University / Injibara University / Lake Tana and Other Water bodies Protection and Development Agency Soka University / The University of Shiga Prefecture / Lake Biwa Environmental Research Institute Research Institutions in Japan Research Period 5 Years

Project for Development of Complex Technologies for Prevention and Control of Rubber Tree Leaf Fall Diseases =

Protect rubber trees from leaf fall diseases by using a multifaceted scientific approaches





Pesticide scree

Connect rubber-producing countries and consuming countries through early-stage measures against rubber tree leaf fall diseases

Infection of rubber leaf fall diseases has been widely spread in Southeast Asian countries and causes serious damage to rubber production. Through cooperation with Indonesian Rubber Research Institute and Universitas Indonesia, we aim to exterminate the disease by chemical and microbial pesticides, establish a genome-assisted breeding technology, and detect infected areas in the early stages by using images from satellites and drones, and prevent leaf blight and control the spread of infections. Through this link between Japan and a resource-producing country, we will also produce research leaders who can contribute to breeding that takes advantage of modern science and technology as well as local resources

Enabling stable supply of natural rubber that meets growing alobal demand

Southeast Asia supplies more than 90 percent of the world's natural rubber. Because Southeast Asian rubber trees are reproduced by clonal propagation, they end up being infected with the same diseases. By sharing the technology we develop with countries

that produce natural rubber, the project will contribute to realizing stable supplies of natural rubber that meet the world's demand and stable livelihoods for rubber farmers.

Research Institutions in Indonesia Indonesia Rubber Research Institute / Universitas Indonesia Research Institutions in Japan RIKEN Center for Sustainable Resource Science / Gifu University / RIKEN Center for Advanced Photonics(RAP) / Maebashi Institute of Technology Research Period 5 Years



Symptoms of leaf fall diseas





rincipal Investiga Dr. Suroso Rahutomo Indonesian Rubber Research Institute





Prof. WATANABE Kvoko

College of Agriculture, Tamagawa

Principal Investiga

Dr. Parsons N. Hai

Associate Professor of Communicatio

and Development Studies Director of

International Affairs Office, Central

Luzon State University (CLSU)















Project Researcher ASAMI Tadao

Graduate School of Agricultural and Life Sciences. The University of Toky



Principal Investigat Prof. Javzan BATKHUL National University of Mongolia, Schoo of Engineering and Applied Science



Trial cultivation at



Surveying quinoa field lying fallow that is at risk of soil er

40⁼ Strengthening of Resilience in Arid Agro-Ecosystems Vulnerable to Climate Change, Through Research on Plant Resources and Technological Applications =

Address climate change with guinoa, a highly nutritious crop that withstands harsh environments





Prof. Giovanna Rocío

Universidad Mayor de San Andrés

Chemical Research Institute

Almanza Vega

2 = Development of Climate Change Resilient Innovative Technologies for Sustainable Wheat Production in the Dry and Heat Prone Agro-ecologies of Sudan and Sub-Saharan Africa =

Contribute to resolving food shortages by developing heat-tolerant wheat

Quickly breed high-quality wheat lineages adaptable to Africa's climate

Demand for wheat is on the rise in Sub-Saharan Africa, but production is failing to meet demand. This project employs heat-tolerant lineages derived from wild relatives, identifying their quantitative loci and developing selection markers, and then developing lineages with no quality degradation. It will also develop technology for tolerance selection using metabolites as indicators, and growth models matching future climate change scenarios. To achieve this, the project will set up molecular breeding facilities and an innovation platform in Sudan.



varieties that can withstand harsh climates

The project will develop highly accurate selection technology at the molecular breeding facilities that are established, and enable speedy dissemination of new varieties through an innovation platform. It is expected to contribute to food security by developing varieties of wheat suited to the dry and heat-prone agro-ecologies of Sub-Saharan Africa, which are expected to experience even harsher conditions in the future

Research Institutions in Sudan Agricultural Research Corporation, Sudan / Sudan Meteorological Authorit Research Institutions in Japan Tottori University Research Period 5 Years

43 = Utilization of Thailand Local Genetic Resources to Develop Novel Farmed Fish for Global Market -

breeding and preservation

Build Thailand's status as the Kitchen of the World by farming local fish and shellfish



technology. The project will also develop technology for preserving diverse genetic resources in perpetuity and for regenerating the species from these resources at any time.

Contribute to food security by developing farming methods, including domestication!

The project will develop production technologies (genome-based breeding and vaccines, etc.) for Asian sea bass and banana prawns, including domestication, in order to make both species into major marine products on the international market. It will be possible to preserve gene resources in perpetuity on the cellular and tissue level. The project aims to lead to a stable supply of highly nutritious fish and shellfish farmed in a way that has a low impact on the natural ecosystem.

 Research Institutions in Thailand
 Department of Fisheries, Ministry of Agriculture and Cooperatives, Thailand / National Center for Genetic Engineering and Biotechnology, Thailand National Science and Technology Development Agency / Kasetsart University / Chulalongkorn University / Walailak University / Suranaree University of Technology / Prince of Songkla University

 Research Institutions in Japan
 Research Period
 Fisheries, Ministry of Agriculture and Cooperatives, Thailand / National Center for Genetic Engineering and Biotechnology, Thailand National Science and Technology / Japan International Research Center for Agricultural Sciences / Japan Fisheries Research and Education Agency / Kanagawa University / Mie Prefectural Fish Farming Center
 Research Period



Developing and disseminating sustainable quinoa production technology to cope with climate change

Quinoa is highly nutritious, and it is the only crop that can be cultivated in the highlands of Bolivia that lie at an elevation of approximately 4,000 meters, an extremely unfavorable environment with saline soil, droughts, and frost. However, quinoa production is currently at risk due to issues such as soil erosion caused by frequent extreme weather and the expansion of farmlands. This project develops and introduces sustainable quinoa production technology through the establishment of genetic resources for quinoa, development of new breeding lines with enhanced resilience, management of fallow land, and coordinated crop-livestock production.



the Uyuni Salt Flat

Contributing to global food security with a superfood native to the Andes

This project will contribute to stable food production and improved national income in Bolivia through the development and spread of sustainable quinoa production technology. Global food security is expected to be enhanced through the application of technology developed in this extremely adverse environment to other arid regions throughout the world at risk of desertification, as well as to a wide variety of farming environments.



The Acceleration of Livestock Revolution in Thailand aiming to be the Kitchen of the World through the Development of Novel Technologies for Stable Livestock Production and Food Safety =

Achieve sustainable livestock production by a new infectious disease control technology



Foot-and-mouth disease (FMD) and other major livestock infectious diseases are causing export restrictions and decline of livestock productions. This project, in Thailand who aims to be the Kitchen of the World, applies experiences learned from controlling FMD outbreak in Mivazaki Prefecture. In cooperation with government agencies and veterinary universities, a multidiagnostic system for major infectious livestock diseases and a food poisoning bacteria elimination technology from the poultry are to be developed, and an epidemic prevention system based on the disease dissemination mathematical model is to be established. Through these research and training

programs, this project strives to foster experts who can contribute to livestock epidemic prevention in the globalized era.

Promoting a stable and sustainable livestock production and a safe meat supply



This project establishes technology for controlling livestock infectious diseases such as FMD in Thailand. Thailand, who plays a leading role in ASEAN, will influence the neighboring countries after implementing this technology that consequently contributes to a stable and safe livestock supply worldwide.







Research Institutions in Thailand Department of Livestock Development, Ministry of Agriculture and Cooperatives, Thailand / Chulalongkorn University Mahidol University / Chiang Mai University / King Mongkut's University of Technology Thonburi / National Institute of Animal Health Research Institutions in Japan University of Miyazaki / Tokyo University of Agriculture and Technology / Hokkaido University / Kaijo Corporation / Nipponham Foods Ltd. / Kanematsu Corporation 5 Years Research Period



333





Principal Investiga

Dr. CHINTAPITAKSAKUL l erdchai Director, National Institute of Animal

Health (NIAH), Department of Livestock Development, Ministry of Agriculture and Cooperatives, Thailand



ive laboratory establis at the Faculty of Veterinary Science at Chulalonakorn Universit



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sidues in the field near th of the Uyuni Salt Fla









Specially Appointed Prof. TSUJIMOTO Hisashi Arid Land Research Center, Tottor



Principal Investigate Associate Prof. Izzat Sidahmed Ali Tahir Wheat Research Program, Agricultural Research Corporation, Sudan

Contribute to resolving food scarcity in Africa by creating







heat-tolerant ge

tauschii, a wild species tha

ding heat-tolerant whe





Prof HIBONO Ikuo Faculty, Department of Marine Biosciences, Tokyo University of Marine Science and Technology

Principal Investiga Ms. Montakan Tamtin Director, Coastal Aquaculture Research and Development Division, Department of Fisheries, Ministry of Agriculture and Cooperatives, Thailand

in sea bass rea

development o

neries research and

Select useful groups from fish and shellfish native to Thailand for

Production of food resources from fish farming is important because half the marine products used for food that are consumed in the world come from fish farming. This project will conduct genome-based breeding to select for useful traits in Asian sea bass and banana prawn, which are indigenous to Thailand. The aim is to make these species into major farmed marine products that can hold a top position in the international market, as well as to develop infectious disease prevention methods, fortified feed, and all-female prawn production





SATREPS 2024 **Disaster Prevention and Mitigation**





sland (Vanuatu). A local leader is being briefed

can be seen in the background.

mittina Mt. Yasur volcan

n the survey. The ash-

disasters

Southwest Pacific Countries =

Volcanic island nations working together to reduce the risk of eruption and tsunami disasters!







Mr. Taaniela Kula CEO. Ministry of Lands and Natural Resources



Mr. Abraham Nasak

Acting Director General Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Environment, Energy and Disaster Managemen



Principal Investigat Dr. Raiieli Lewatu Taga Permanent Secretary, Ministry of Lands and Mineral Resource

Research Institutions in Tonga, Vanuatu, Fiji Research Institutions in Japan Tonga Geological Services / Vanuatu Meteorology and Geo-hazards Department / Mineral Resource Department of Fiji The University of Tokyo, Tohoku University, Mount Fuji Researcl Institute Yamanashi Prefectural Government **Research Period** 5 Years

collaboration, and a sustainable human resource development system will be built.

The establishment of a trilateral collaboration platform to

mitigate the risk of wide-area volcanic eruptions and tsunami

New knowledge and observation technologies will be created concerning volcanic eruptions

in island and sea areas where observation data and understanding are limited. The outputs

will be applicable to volcanoes in island and sea areas in Japan and the world. In addition,

the issue of limited human resources in island countries will be overcome through regional

45 = Compound Disaster Risk Reduction associated with Large Earthquakes and Tsunamis =

Protecting international port cities from compound disasters with dominostyle chains of destruction!



invey at the Port of Acc

Science, engineering, and the social sciences come together to reduce the risk of compound disasters in international port cities caused by earthquakes and tsunamis

When international port cities are hit by earthquakes and tsunamis, in addition to direct damage, there are compounding effects such as tsunami fires, hazardous material spills, and economic

stagnation from the disruption to logistics networks. In this research project, earthquake scenarios are developed based on seafloor, land-based, and geodetic observations, and compound disaster risks are evaluated based on earthquake and tsunami simulations. Infrastructural countermeasures, risk management and evacuation strategies are then proposed with the aim of implementing these in society through communication with relevant organizations and residents.



The development of risk assessment methods and proposal of risk reduction measures

Mitigating disasters through knowledge of past and present

The January 2022 eruption of a submarine volcano in the Kingdom of Tonga and the following

tsunami had a global impact, and highlighted the importance of monitoring, forecasting,

and countermeasures for volcanic activity in the ocean areas around islands. This project

aims to elucidate the history and characteristics of volcanic eruptions and tsunamis in the

volcanic activity in the southwest Pacific Ocean

southwest Pacific Ocean, and to develop techniques for understanding current volcanic activity. Tonga, Fiji, and Vanuatu

will collaborate to utilize these technologies to mitigate disasters. The island countries work together, discussing and

building improvement measures on the problems of human resource shortages and disaster countermeasures.

The project will develop a comprehensive compound disaster risk assessment methodology together with counterpart researchers, propose risk reduction measures, and promote investment in disaster risk reduction by national and local governments as well as the private sector through com-

munication efforts. In the long run, the developed methodology will contribute to the disaster risk reduction of international ports in Japan and around the world.

Research Institutions in El Salvador Research Institutions in Mexico search Institutions in Japan search Period

52

University of El Salvador / Centroamerican University José Simeón Cañas / General Direction of Hazard Observation, Ministry of Environment and Natural Resources / General Direction of Civil Protection, Ministry of Internal Affaires National Autonomous University of Mexico / National Disaster Prevention Center Kyoto University / University of Tokyo / Kobe University 5 Years

Assistant Prof NAKANO Genta



rincipal Investigato Prof. Miguel Ángel Hernández Martínez Faculty of Agricultural Science.



Successful rocke

riagered light

Principal Investigato Associate Prof. Josué Tago Pacheco

School of Engineering, National Autonomous University of Mexico



46 = Establishment of a Research and Education Complex for Developing Disaster-resilient Societies - MARTEST =

Use disaster mitigation science to reduce the damage from massive active-fault earthquakes!



Building a resilient society through earthquake-resistance technology and earthquake risk assessments

Türkiye has many vulnerable structures, and has experienced severe earthquake damage. To mitigate this earthquake damage, in this project we are conducting research on earthquake-resistance technology, developing an earthquake and tsunami scenario platform, conducting an earthquake risk assessment for the anticipated North Anatolian Fault earthquake (Marmara earthquake) through observational and measurement studies, and promoting earthquake-resistance measures. We are also working to encourage disaster mitigation education using simulation studies and the visualization of disaster images by means of information technology, and enabling the adoption of procedures for proposing recovery plans based on

these disaster images.

Preparing for the anticipated Marmara earthquake through disaster mitigation science

Through AFAD (the Turkish disaster management agency), we are contributing to the creation of an earthquake-resilient society by promoting earthquake-resistance technology and training earthquake engineers. This is raising awareness of the risk of the anticipated Marmara earthquake and encouraging the formulation of reconstruction plans by the government. These research outcomes will be extended to Japan, Türkiye, and neighboring countries, helping to build resilient societies.

 Research Institutions in Türkiye
 Gebze Technical University / Middle East Technical University / Hacettepe University / Yildiz University / KOERI, Bogazici University / Istanbul University-Cerrahpaşa / AFAD (Ministry of Interior Disaster and Emergency Management Presidency / Türkiye Earthquake Foundation / Turkish Red Crescent (TURKKIZILAY)

 Research Institutions in Japan
 Kagawa University / Nagoya University / The University of Tokyo / Chuo University / University of Hyogo

 5 Years
 5 Years

= Real-Time Lightning 3D Imaging and Forecasting Project for Sustainable and Reliable Supply of Energy and Storm Disaster Early Warnina =

Mitigating the damage caused by 200 lightning days a year by nowcasting with advanced observation network

3D imaging of the electric charge distribution in thunderclouds in real time

We are conducting lightning observations on various frequencies of electromagnetic waves, and establishing an observation network to image whole lightning channel development in detail from the micro-discharge in clouds that are precursors of lightning discharge start, how they develop, and where they terminate. We can estimate the locations and the amount of neutralizing charge inside thunderclouds. We are verifying the results of these estimations and improving their accuracy by using the lightning return-stroke current waveforms measured from lightning strikes on tall buildings and in rocket-triggered lightning experiments, to enable the nowcasting of lightning activity.

Use sophisticated lightning data to enable a stable electric power supply and an early warning system for severe weather disaster

Use highly accurate lightning observations and short-term prediction data to switch to a backup power source in places where an outage or voltage fluctuations cannot be permitted, or to maintain power and communications equipment. Investigate the association between lightning activity and rainfall, leading to early warning of heavy precipitation that may cause flood and other damage. Extend these results from the Malacca Strait coastline to neighboring regions.

Research Institutions in Malavsia Universiti Teknikal Malavsia Melaka / Universiti Tenaga Nasional Kindai University / Chubu University / OTOWA ELECTRIC CO., LTD. / Research Institutions in Japan The University of Electro-Communications / Gifu University / University of Fukui Research Period 5 Years



A gigunie room. elieved to be a Tongan tsunami boulder. ome people believe that the tsunami wa

caused by the eruption of the Kuwae Volcar

subjects of this

Vanuatu. This is one of the research

tional kick-off conference he Fiii (Nadi City). In addition to lapan and the

Disaster Prevention Research Institute





University of El Salvado







Principal Investigato

Designated Prof.

KANEDA Yoshiyuk

Designated Prof. / Vice Director of

Management Shikoku (IECMS). Kagawa University

Principal Investigator

Illustration of MARTES

(Marmara Eartha

Prof. Bülent Akbas

Gebze Technical University Director MARTEST center.

IECMS Institute of Education, Research and Regional Cooperation for Crisis











Principal Investigator Prof.MORIMOTO Takeshi

Faculty of Science and Engineering

Principal Investigator Manager Mohd Riduan Ahmed

Centre of Technology for Disaster Risk Reduction, Universiti Teknikal Malaysia Melaka

48 = Numerical Weather Prediction and Warning Communication System for Densely Populated and Vulnerable Citize

Protecting people against disaster by predicting intense rainstorms and flooding!

Develop a total package to protect cities against flooding caused by intense rainstorms

Natural disasters caused by intense rainstorms and flooding are related to climate change, and their risk is increasing on a global scale. Regions where the infrastructure and buildings may not be built to global standards and densely populated cities are particularly vulnerable. In this study, we are developing a total monitoring, prediction, warning, utilization, and behavioral package for natural disasters caused by intense rainstorms and flooding, and putting it to use in the major conurbations of Buenos Aires and Córdoba. We are



organizing a meteorological and hydrological observations network and computers, developing a prediction and warning system, and conducting disaster mitigation education for the general public while training specialist staff.



Transmitting and utilizing warnings on intense rainstorms and flooding leads to disaster mitigation behavior

The reduction in damage in the participating areas will become clear, and the scheme will be extended throughout Argentina. Its success in Argentina will lay the foundations for, and mark the beginning of, disaster mitigation for intense rainfall and flooding that is globally applicable. Going forward, by developing this package on a global scale while continuing to increase its sophistication, we will contribute to tackling this issue worldwide.

Research Institutions in Argentine National Meteorological Service / National Hydrological Service / University of Buenos Aires / National North Eastern University / National University of Cordoba / Risk Management and Civil Protection – Córdoba Province / Risk Management and Civil Protection **Buenos Aires Province** RIKEN / Osaka University / International Centre for Water Hazard and Risk Management (ICHARM), Public Works Research Institute (PWRI) Research Institutions in Japan Research Period 5 Years

49 = Building Sustainable System for Resilience and Innovation in Coastal Community -Coastal Community =

Protecting Indonesia's coastline with green infrastructure

Scientific evidence-based improvements to the defensive capabilities of coastal areas and their social implementation

The Indonesian coastline is subject to severe damage due to coastal erosion and submersion by waves and tsunamis, and this hampers the development of coastal areas. We are organizing coastal monitoring networks using the latest technology, carrying out simulations, and transferring technologies for coastal preservation utilizing sandy beaches and mangrove forests, in order to conduct scientific evidence-based improvements to the defensive capabilities of coastal areas and create approaches for their social implementation. Our aim is to create coastal communities that can achieve a balance between disaster prevention, environmental preservation, and economic development.

Disaster prevention and mitigation using green infrastructure



We will conduct standardization of the optimum natural environment-oriented coastal defense technology, combining monitoring for coastal disaster mitigation with green-gray infrastruc-

ture taking account of improvements in monitoring and modeling technology and changes over time. We will establish the technology thus developed as Indonesia's standard technology, with the aim of extending it to other areas and encouraging its adoption in Southeast Asia and Pacific island nations.

earthquake and tsunami in 2018

Research Institutions in Indonesia Research Institutions in Japan Research Period

Bandung Institute of Technology / National Disaster Management Agency / Gadjah Mada University / University of Indonesia / The Ministry of Public Works and Housing / Indonesian Agency for Meteorology, Climatology and Geophysics / National Research and Innovation Agency Kyoto University / Tohoku University / Port and Airport Research Institute /Chuo University 5 Years



Prediction Science Laboratory, RIKEN Cluster for Pioneering Research



Principal Investigator Dr. Yanina García Skaba esearcher. National Meteorological







Prof MORI Nobubito





measures on Bal









Development, Bandung Institute of



Mangrove fores (Iriomote-jima)





Development of a disaster information integration system-capable of quickly grasping information about the occurrence of earthquake and tsunami disasters and about ensuing damage to buildings and infrastructure, integrating that information, and displaying it in real time to people in charge of implementing disaster countermeasures-could contribute to a significant reduction in the number of people harmed or killed because they failed to flee in time, and would likely be adopted in earthquake-prone countries around the world.



Metropolitan Area =

and tsunamis!

assesses damages from earthquakes

🦣 = The Project for Technology Development on Life Time Management of Road and Bridge for Strengthening Resilience in Thailand =

Harmonious balance between people and technology to ensure the safety of road networks

Develop technologies and human resources that can make roads and bridges last a long time

This project aims to develop technologies for properly assessing the effects of salt damage, scouring, and heavy loads on road structures, and technologies that provide strong protection for bridges against salt damage, scouring, and heavy loads. Additionally, we will establish an educational curriculum for cultivating highly capable road management engineers who have a solid command of said technologies, and we will invest a good deal of energy in developing human resources. Taking into account harmony between technology and people, this research will eventually result in an infrastructure maintenance method that is effective for the road structures of Thailand.

Help solve the worldwide problem of aging road infrastructure!



The technology developed through this project will extend the life of roads and bridges that make up the Asian Highway Network, which in turn will contribute to improving the safety and reliability of the ASEAN road network. Moreover, we are confident that the results of this research will contribute greatly to streamlining maintenance methods for decrepit infrastructure in Japan.



Research Institutions in Thailand Kasetsart University / Department of Highway / Chulalongkorn University Waseda University / Hokkaido University / Kansai University / Nihon University / NIPPON STEEL Chemical & Material Co., Ltd. / Research Institutions in Japan **Research** Period 5 Years

54



Kuta beach on the island of Ba





makes it possible to take appropriate measures



= Development of Integrated Expert System for Estimation and Observation of Damage Level of Infrastructure in Lima

Use sensors to create a system that immediately





Prof. KUSUNOKI Koich Earthquake Research Institute The University of Tokyo



Prof. Carlos Zavala Japan Peru Center for Earthquake Engineering Research and Disaster Mitigation (CISMID), National University of Engineering

> ncing online enab the project to continue despite

Speed up decision-making related to earthquake disaster response in Lima

Earthquake and tsunami disasters occur suddenly, and their effects are widespread. In order to respond effectively to a disaster, it is important to get an overall picture of the damage as soon as possible. However, people usually gather information about the status of earthquakes or tsunamis, and about damage to buildings and infrastructure, etc. by checking each aspect separately, mainly using visual inspection and manual processes. By making full use of modern sensor technology, we intend to develop a system that can grasp the whole picture of the scope of the damage as quickly as possible after the occurrence of a disaster and rapidly integrate the findings into a geographical information system with display capabilities.

Immediately grasping the full extent of damage caused by an earthquake or tsunami



0





Flood dan



Prof SATO Yasuhiko Department of Civil and Environmenta Engineering, School of Creative Science and Engineering, Waseda University



rincipal Inv Prof. WANCHAI Yodsudia Vice Dean for Research, Faculty of Engineering, Kasetsart University









KAJIMAROAD CO., LTD. / KYOWA ELECTRONIC INSTRUMENTS CO., LTD. / KSK CO., LTD. / HIKARI CO., LTD. / Hanwa Co., Ltd.



agricultural, and economic models



52 = Development of a Hybrid Water-Related Disaster Risk Assessment Technology for Sustainable Local Economic Development Policy under Climate Change =

Hybrid water-related disaster risk assessment combining climatic, hydrological,

It is feared that frequent water-related disasters in the Republic of the Philippines brought on by future climate change will

hinder sustainable development of regional cities and exacerbate overconcentration in Metro Manila. This project creates

hybrid water-related disaster risk assessment models that combine future climate change, hydrological, agricultural, and

economic models and conducts an objective assessment of the effectiveness of investing in disaster prevention measures

disaster risk assessment

in the Pampanga River basin and the Pasig-Marikina River and Laguna Lake basins in the environs of Metro Manila.

Predict sustainable local economic development scenarios based on interdisciplinary assessment of water-related disaster risk





Center for Integrated Disaste Information Research. Interfaculty nitiative in Information Studies, The University of Tokyo





Prof. Fernando C. Sanchez, University of the Philippines Los Baños (UPLB)



Roads with deep ditche

soil by using soil additives derived from local plants

Many parts of Ethiopia remain hardly accessible due to a lack of well-maintained rural roads. Expansive soil, a typical problematic soil spread across Africa, makes it difficult to construct and maintain rural roads. This project will identify physical mechanisms of the expansive soil and develop soil additives made from local plants to improve the stability of unpaved roads. The goal is to find simple and convenient methods to construct roads without relying on expensive machinery and to develop an operational model in collaboration with local governments and communities.

Improving year-round accessibility in rural areas of sub-Saharan region

Constructing passable, maintainable,

and affordable roads in rural Ethiopia

The project seeks to identify local plants that can be used for soil additives and apply them to the expansive soil in constructing rural roads. In the future, this road maintenance method can solve problems of the expansive soil found all over Africa. By incorporating different local conditions and improving the method as a comprehensive operational model, this project can increase accessibility to all-weather roads in sub-Saharan Africa

Research Institutions in Ethiopia Addis Ababa Science and Technology University(AASTU) / Jinka University(JKU) / Ethiopian **Boads Authority(EBA)** Kyoto University / University of Miyazak Research Institutions in Japan **Research Period** 5 Years

Research Institutions in Philippines University of the Philippines Los Baños (UPLB) / University of the Philippines Diliman (UPD) / University of the Philippines Mindanao (UPMin) Research Institutions in Japan The University of Tokyo / International Centre for Water Hazard and Risk Management (ICHARM), Public Works Research Institute (PWRI) / Tohoku University / Kyoto University / The University of Shiga Prefecture / Nagoya University **Research Period** 5 Years

Contributing to sustainable economic development

Utilizing hybrid water-related disaster risk assessment models for these

river basins, this project will predict future economic development

scenarios in line with disaster prevention measures formulated in

advance and present policy recommendations for enhanced resilience

to water-related disasters caused by climate change and sustainable

economic development through balanced national development.

through policy recommendations based on water-related

53 = Development of Early Warning Technology of Rain-Induced Rapid and Long-Travelling Landslides =

Predict catastrophic landslides a day in advance

Developing a system for transmission of early warning information about long-travelling landslides and support of risk assessment

Landslides occur frequently in Sri Lanka, where there has been a marked increase in torrential rainfall with the onset of climate change. In order to make it possible to predict a day in advance the occurrence and range of rapid and long-travelling landslides, which are particularly severe, this project develops a system for early transmission of information predicting landslides and for supporting risk assessment, incorporating cutting-edge technology that predicts maximum accumulated rainfall within a 500-meter grid. It takes into consideration the influence of orographic turbulence in mountainous areas, and predicts the occurrence, spread, and range of landslides due to unsaturated seepage in highly weathered soil on hillsides in tropical forests.

Contributing to disaster prevention in monsoon region countries subject to frequent disasters due to torrential rainfall

International Consortium on Landslides / Kyoto University /

Institute of Science Tokyo / Forestry and Forest Products Research Institute



Research Institutions in Japan

Research Period

Research Institutions in Sri Lanka National Building Research Organisation

5 Years

The technology developed in this project, which predicts rainfall and the occurrence and range of landslides, is expected to be used in various fields, such as in mitigation of rapid and long-travelling landslides, flood control, and disaster prevention in rural and urban areas in Sri Lanka, as well as in other Southeast

Asian nations in monsoon regions, where similar disasters are common



Dr. Konagai Kazuo Principal Researcher, Research ision, International Consortium or l andslides



Dr. Asiri Karunawardena Director General ational Building Research Organi











54 = Development and Operation Model of Plant-derived Soil Additives for Road Disaster Reduction on Problematic Soil =



Prof. KIMURA Makoto The Center for African Area Studie Kvoto University



Principal Investigate Assistant Prof. Fitsum Tesfaye Berhe Civil Engineering Department Addis Ababa Science and Technolog University

Developing methods for constructing roads on expansive





etina in Addis Ab



SATREPS 2024 Infectious Diseases Control

SATREPS projects in the field of Infectious Diseases Control have been transferred to AMED the Japan Agency for Medical Research and Development. (The transfer took place on April 1, 2015. Projects that finished before that date were not transferred.)







Reducing uncontrolled zoonoses through a combination of One Health, education, and public-private partnerships!

Problem solving with local residents based on models of socioeconomic and infectious disease transmission systems

Brucellosis and zoonotic tuberculosis are widespread among humans and livestock in Tanzania. This project will promote data sharing and improved understanding of both diseases in the health and veterinary sectors. With the participation of stakeholders, system dynamics models of socioeconomic and infectious disease transmission systems will be used to find the conditions for successful control of infectious diseases, including a gender



on the move

perspective. Based on the results, different sectors will collaborate to educate the public on infectious diseases and plan and implement public-private partnerships with residents to control infectious diseases.



By the collaborative infectious diseases control between health/veterinary, and public-private sectors, high-risk behaviors will be reduced

Knowledge of brucellosis and zoonotic tuberculosis and their prevention will be improved among herders and residents. The number of farmers implementing infectious disease control measures in livestock will increase, while high-risk behavior among people will be reduced. One Health, education, and public-private partnerships based on systems modeling for infectious disease control are expected to become widely adopted around the globe.



Dr. IWAGAMI Moritoshi

Chief, Department of Tropical Medicine and Malaria, Research Institute, National

Center for Global Health and Medicine

Research Institutions in Tanzania Sokoine University of Agriculture, Tanzania National Institute of Medical Research, Muhimbil University of Health and Allied Sciences Research Institutions in Japan Yamaguchi University. Obihiro University of Agriculture and Veterinary Medicine. University of Tokyo **Research Period** 5 Years

56 = Project for malaria and neglected parasitic diseases control and elimination using advanced research technique, communication tools and eco-health education =

Use the LAMP method to detect malaria patients and identify endemic areas from environmental DNA!

Develop technology for the diagnosis and prevention of parasitic disease, and spread eco-health education

In Laos, the poorest country in southeast Asia, parasitic diseases including malaria, Mekong schistosomiasis, and Thai liver fluke are impediments to both human health and economic development. To decrease the number of patients with these parasitic diseases and promote economic development in the country, we are using the LAMP method and environmental DNA for the accurate identification of patients and endemic areas. We are also using pulse current technology to develop technology to deactivate the Thai liver fluke in the fish on which it is parasitic, and laying the foundations for the practical use of these scientific technologies in society



Help eliminate and suppress malaria, Mekong schistosomiasis, and Thai liver fluke!

If we can prove that the LAMP method will accelerate the elimination of malaria from Laos, this will have a ripple effect on malaria prevention measures in other countries. Identifying at-risk areas by using environmental DNA will contribute to effective control measures and education for infection prevention. Pulse current technology will enable fish to be supplied safely for eating raw, and will also contribute to measures for dealing with parasites in meat for human consumption in future.

Research Institutions in Lao People's Research Institutions in Japan Research Period

Institut Pasteur du Laos / Center of Malariology, Parasitology and Entomology / Lao Tropical and Public Health Institute / University of Health Sciences / Laos National University / Ministry of Education and Sport Nippon Bunri University / Niigata University / Niigata University of Pharmacy and Medical and Life Sciences / University of the Ryukyus / Kumamoto University / Shinshu University / Nagano College of Nursing 5 Years





Dr. MATHEW Coletha Senior Lecturer. School of Veterinary Medicine and Biomedical Sciences Sokoine University of Agriculture

57= Project for Integrated Research and Development towards Control and Elimination of Schistosomiasis =

Develop essential tools for the control and elimination of schistosomiasis!

Create transmission monitoring tools, behavior change communication models, and novel drugs

Schistosomiasis is a parasitic disease that affects 250 million people in 78 countries worldwide. The larvae are released from freshwater snails and enter the mammalian body through the skin, which cause various chronic symptoms. There is no vaccine. The eggs are released into the environment with feces and urine, and contribute to the transmission of the infection. Diagnosis by egg detection is low-sensitive and inadequate for monitoring. The only effective drug is praziquantel, but even this, reportedly, does not work well in some cases. This project aims to overcome these issues.



communication and drug discovery A highly sensitive method for monitoring infection transmission in

people and water environments alongside behavior change communication models will contribute to a program for controlling and eliminating schistosomiasis and other infections. Discovering new drug lead compounds will accelerate drug discovery research not only for schistosomiasis but also for other types of helmintic infections.

search Institutions in Kenya Kenya Medical Research Institute / Maseno University / Ministry of Health search Institutions in Japan Kobe University / National Research Center for Protozoan Diseases, Obih esearch Institutions in Japan University of Agriculture and Veterinary Medicine / Tokyo Women's Medical University Research Period 5 Years

58 The project for One Health approach to control of Neglected Tropical Diseases with special attention on sandfly and mosquito borne infections in Türkiye =

Halt the spread of arthropod-borne infectious diseases!

Formulate guidelines and develop an infection monitoring and warning system

Changes in the biota due to warming and socioeconomic activity are facilitating the spread of infectious diseases carried by arthropods. In Türkiye, in addition to mosquito-borne viral infections, leishmaniasis, which is carried by sandflies, is a threat to human health that is causing economic loss. In this project, our aim is to ascertain the transmission cycle of these infections and formulate guidelines for their control based on scientific findings. We will also build a monitoring and warning system covering the entirety of Türkiye.



used worldwide

Establish technology for efficient pathogen detection and contribute to infection control measures. This will help develop technology that will contribute to new infection control measures in Japan as arthropod populations change. The monitoring and warning system and guidelines established in this project will provide a model case that can be adapted for use worldwide, as leishmaniasis is a global problem.



Research Institutions in Türkiye Ege University / Turkish Ministry of Health Research Institutions in Japan Graduate School of Agricultural and Life Science, The University of Tokyo / The Institution of Medical Science, The University of Tokyo / National Institute of Infectious Diseases, Japan Research Period 5 Years





Diagnosing malaria the LAMP method











59 = The project for institutional capacity building for eliminating Helicobacter pylori related death =

Establishing a sustainable testing and treatment system to free humanity from gastric cancer!

Toward a national H. pylori study using rapid testing and

The Kingdom of Bhutan has the world's third-highest mortality rate from gastric

cancer. Many cases of gastric cancer are caused by Helicobacter pylori infection,

and it is thought that more than half of the Bhutanese population in all age groups

is infected. With the goal of controlling H. pylori infection and eradicating asso-

ciated deaths, including those from gastric cancer, we have established a rapid

testing method for *H. pylori* and are taking measures to counter drug resistance,

which is a matter of concern. We are also working to improve the endoscopic





Faculty of Medicine



Principal Investigat Dr. Kinzang P. Tshering President, Khesar Gyalpo University of

Medical Sciences of Bhutar

opy training at Jigme Nangchuck Nat



endoscope technology

Helping eradicate H. pylori-related deaths with improved techniques for diagnosis and treatment

We are working toward the domestic production of in vitro diagnostics that enable inexpensive, rapid H. pylori diagnosis. We are laying the foundations for genomic analysis, and will implement personalized eradication therapies. We are establishing a society of gastrointestinal endoscopy in Bhutan, and will improve the board-certification system. In collaboration with the government, we will conduct a national survey, and lay out the path toward eradicating H. pylori-associated deaths.



Research Institutions in Bhutan Khesar Gyalpo University of Medical Sciences of Bhutan / Royal Center for Disease Control / Jigme Dorji Wangchuk National Referral Hospital Research Institutions in Japan Oita University Research Period 5 Years

60⁼ The trilateral collaboration project for anti-infectious disease drug development: from lead antimization to travel.

Enable discovery and development of medicines to fight infectious diseases in low- and middle-income countries

Use native biological resources to create medicines for tropical infectious diseases

This project will explore the natural microbial resources of Southeast Asia to discover compounds that might serve as new drugs to fight infectious diseases that cause problems on a global scale, like malaria or tuberculosis. Moreover, it will alter the structure of such compounds to improve their therapeutic effectiveness and safety, and develop them as pharmaceuticals intended for human use. In addition to transferring technologies that are essential for drug discovery and development-including technologies for maintaining and using microbial resources, searching for compounds, synthesizing chemical compounds, and testing for safety-the project will develop relevant human resources and aim for project outcomes to be applied so that middle- and low-income countries can conduct drug discovery that makes use of microbial resources.



Facility in Indonesia

Chemical synth



Chemistry Department, University of

Principal Investigato

Rahman

Prof. Noorsaadah Abd



Deputy Chairperson for Facilitation of Research and Innovation. National Research and Innovatio Agency (BRIN)



= Interdisciplinary Research for an Integrated Community-directed Strategy for Sustainable Freedom from Malaria =

Eliminate malaria in tropical Africa through integrated social and biomedical science research in collaboration with endemic community members



6

Developing an integrated elimination strategy through field testing and multi-disciplinary monitoring

To address issues such as asymptomatic infection, insecticide-resistant malaria vector mosquitoes, and inappropriate prevention behavior, this project verifies the effectiveness of new vector mosquito control methods and behavioral economic interventions to induce change human behaviors. The immediate aim is eliminating malaria along the Lake Victoria basin in Kenya, where malaria is highly endemic. Drawing on diverse perspectives from multiple disciplines including molecular epidemiology, genetics, serology, vector entomology, and socio-economics, this project will monitor the infection and onset of malaria and explore the true nature of asymptomatic infection and heterogeneity of transmission.

Deployment of the integrated strategy over extended area contributes to malaria elimination and breaks the pernicious cycle of poverty and malaria

This project will develop a community-directed strategy based on an understanding of the mechanism of malaria transmission at the individual and community levels and field-proven interventions to reduce the transmission of malaria in the targeted areas. The strategy will be rolled out over extended areas in the "malaria belt" of tropical Africa and contribute to the demise of the pernicious cycle of poverty and malaria.

Research Institutions in Kenya Mount Kenya University / Kenya Medical Research Institute / Homa Bay County Governmen Research Institutions in Japan Osaka Metropolitan University / Nagasaki University / Tohoku University **Research Period** 5 Years

62 = Control of Tuberculosis and Glanders =

Collaboration between medical and veterinary sciences to control bacterial zoonotic diseases

Conducting epidemiological surveys and developing rapid diagnostic methods for tuberculosis and glanders in Mongolia

Mongolia is one of the countries where tuberculosis flourish seriously in the world. However, little is known about the epidemiology of tuberculosis in animals in Mongolia and the spread of drug-resistant strains among humans has become a serious public health concern. Recently, there is an increasing incidence of glanders, a contagious disease that causes respiratory infection in horses. This project conducts epidemiological surveys and development of rapid diagnostic methods for tuberculosis and glanders, both of which are zoonotic bacterial diseases in Mongolia, through collaboration between veterinary and medical researchers.

Enhancing the efficiency of laboratory diagnosis for the control of tuberculosis or alanders in animals and humans

The project will develop simple and highly sensitive molecular diagnostic methods for Mycobacterium bovis and Burkholderia mallei, serological diagnosistic methods for Burkholderia mallei, and will establish a method for rapidly and comprehensively detecting drug-resistance-related genetic mutations of Mycobacterium tuberculosis, and will evaluate their effectiveness in Mongolia. Implementation of the newly developed methods is expected to improve both animal hygiene and public health.

Research Institutions in Mongolia	National Center for Communicable Disease / Institute of
Research Institutions in Japan	Hokkaido University / Research Institute of Tuberculosis, Japan Anti-tuberculosis Association
Research Period	5 Years



Establish technologies and construct societies capable of using abundant biological resources to develop medicines

This project will establish an international network and a basis for drug development using each country's own resources together with other Southeast Asia partner countries. The drug discovery platform will also be available for use by Japan to develop new remedies for various ailments. It is expected that new drugs for fighting infectious diseases will be adopted for use in society after undergoing clinical trials.

Research Institutions in Indonesia & Malaysia Indonesia: National Research and Innovation Agency (BRIN) / IPB University Malaysia: University of Malaya / Universiti Teknologi Mara / Universiti Putra Malaysia Research Institutions in Japar The University of Tokyo / Nagoya Institute of Technology / Bozo Research Center **Research Period** 5 Years

0

Epidemiological survey of H pylo

and educational activities for



Prof. NOZAKI Tomoyoshi





South, Homa Bay





Principal Investigator

Metropolitan University

Specially Appointed

Professor KANEKO Akira

Graduate School of Medicine Osaka











Prof KIMURA Takash Faculty of Veterinary Medicine



Principal Investigato Dr. Buyankhishig Burneebaatar Consultant, TB Surveillance and search Department, National Center for Communicable Disease

Characterization of the





Jsing remote sensing for more efficient damage assessment of wet-field rice

Help enhance crop insurance as a climate change mitigation measure

Crop insurance, which is expected to be a useful measure for dealing with climate change, is operated as an element of social infrastructure that is important for food security, but faces many problems in Indonesia, which has little experience of its operation. The greatest problems are speeding up damage assessment, which is at the heart of crop insurance, and the objectivity of the assessment results. Our aim in this project was to develop a fast, highly objective damage assessment procedure for wet-field rice affected by drought, pest and disease, and flooding, all of which are covered by insurance, and to implement it in West Java and Bali provinces.

Conventional damage assessments consist of a visual inspection conducted by an assessor, but in this project we created an assessment process utilizing spatial information from sources including UAVs and satellite data, which was integrated with the current method to develop a new damage assessment method. Validation confirmed that this method required less time and labor for objective assessments, and that it is an effective method of damage assessment in crop insurance. It was summarized in guidelines, and an approach to the central government with a view to its operation resulted in a favorable appraisal. Its use is expected to be expanded inside and outside West Java in future

The damage assessment procedure that we developed enables crop growth

status to be evaluated field by field rapidly and across a wide area, and as the information required for the assessment can also be used for other purposes, we anticipate that in future it will be applied to a range of pest and disease and crops other than rice, and that it will be useful across a wide range of other needs in the agricultural sector in addition to crop insurance. Young people leaving the agricultural sector is a serious problem in Indonesia, and the use of high-tech sources such as UAVs and satellite images in this project may not only help modernize agriculture but could also offer a new path into agriculture for young people.





Damage assessment map of bacteria eaf blight of rice assessed from UAV data (evaluation results by field) Figure Figure 2

"Development and Implementation of New Damage Assessment Process in Agricultural Insurance as Adaptation to Climate Change for Food Security" Principal Investigator: Associate Prof. HONGO Chiharu Adoption Fiscal Year FY 2016



Relieve congestion and reduce CO2 emissions by increasing traffic visibility 0

Solution for transportation and environment challenges by smart mobility

The negative impacts of the increased road traffic, environmental destruction, and fatal accidents by imbalance between them and Indian's rapid economic development are becoming a major social problem. Their resolutions will require understanding the actual situation of urban traffic, which has been difficult to assess before. Our aim was to use big-data analysis based on the latest sensing technology and traffic theory to assess the actual situation, establish shared methods for its resolution, and build a system that enables model shifts.

In this project, we accurately measured traffic by using artificial intelligence (AI) image technology, and developed a system that displays appropriate choice of transport by mobile devices and variable message signboards (VMSs), which are already widely used, to enable the use of multiple modalities including public transportation. In metropolitan activity rerocation simulation covering the entire city, this was predicted enable a reduction in CO₂ emissions of up to 7.1% in 2035. We also actively publicized this technology through workshops and

Help resolve issues of poverty and nutrition in Africa

production despite a low nutrient supply from fertilizers and soil.

Madagascar is a major rice-producing country, with rice consumption per person

in over twice that in Japan, and more than half the population is engaged in rice

cultivation. However, farmers' poverty means that they are unable to buy much

fertilizer, and because much of the soil is weathered and unable to supply phos-

phates, which are essential for crop growth, the rice yield remains stubbornly

low. There is thus a need for rice production techniques that efficiently improve

19th and early 20th centuries, we developed a phosphate immersion treatment

that can efficiently improve wet-field rice yield with the application of a small

amount of fertilizer even in weathered soils that lack nutrients. This technique

is a simple procedure that involves coating the roots of wet-field rice plants with

a slurry made from a mixture of phosphate fertilizer and paddy-field soil before

they are transplanted, and has been shown to double the efficiency of fertilizer

use compared with regular methods. Repeated investigations in local farmers'

fields showed that this technique shortened cultivation time and improved initial

growth, making it useful under a range of environmental stresses such as cold-

Taking inspiration from Japanese rice cultivation techniques used in the late

handbook publication and distribution.

The Indian Institute of Technology Hyderabad (IITI) has been continuing to

use technology to analyze traffic in the city of Ahmedabad. The lead research institution has focused on the development of urban Intelligent Transport Systems (ITSs) in Bengaluru, and is due to install India's first Japanese-type signal controls. The results of this project will be utilized in social infrastructure, which should both resolve traffic Figure congestion and reduce CO₂ emissions.



Dutcomes (technologies) for main study items introduced in Handbook Part II

India

"Smart Cities Development for Emerging Countries by Multimodal Transport System Based on Sensing, Network and Big Data Analysis of Regional Transportation Principal Investigator: Dr. TSUBOI Tsutomu Adoption Fiscal Year FY 2016



Popularization of fertilizing technology for increasing rice yield with less fertilizer



Our results attracted interest from the government and civil society. We have

begun marketing it a a new technique that can be used even by poor farmers, and it is now spreading among farming communities in the country. Based on a four-year study of household finances, the increased rice yield generated by this project had a positive effect on both farmers' income and their nutritional intake and the spread of this technique should contribute to a stable rice supply and lead to reducing poverty and improving nutritional intake in farming communities

induced sterility



Figure 1. P-dipping method sphorus is placed around the root em which enhances fertilizer use em which en iency of rice

"Breakthrough in Nutrient Use Efficiency for Rice by Genetic Improvement and Fertility Sensing Techniques in Africa" Principal Investigator: Dr. TSUJIMOTO Yasuhiro Adoption Fiscal Year FY 2016



Prevent tsunami damage through a seafloor observation network and lisaster education

Establish a disaster education program and extend it to **Central and South America**

Mexico's Pacific coastline has suffered from numerous earthquakes and tsunamis over the past 250 years, but the coastal part of Guerrero Province last experienced a major earthquake in 1911. This is because of repeated "slow slip" every few years, which releases some of the interplate distortion without a tremor occurring. However, not all the distortion is released through slow slip, and as the accumulated distortion between the plates is highly likely to cause a massive earthquake in the near future, the creation of a seabed observation network for tsunami-causing seabed earthquakes is an urgent task.

We therefore introduced Japanese knowledge and seafloor observation technology to create a seafloor observation network, and investigated interplate locking in the interaction between slow slip and massive earthquakes. We also prepared and validated hazard risk maps, and established a disaster education program taking account of the local social, economic, and cultural environment as a measure to prevent tsunami damage. Using this program, we have been spreading everyday disaster preparations through the region as a whole, in collaboration with local disaster-prevention agencies.

The results of this project received a good response in Mexico, and there are hopes that these research activities will be continued in the country. Moves are now underway to extend the tsunami disaster education program in particular

Rapid diagnosis of rabies and a new information-sharing app to be introduced nationwide in the Philippines

Quick, convenient detection of rabies allowing swift response and outbreak control

Rabies is a serious problem in the Philippines, where it causes 200 to 300 deaths and more than 1 million people to receive preventive treatment with vaccines and rabies globulin following animal bites every year. A large factor that has made it difficult to control rabies in the region is the complexity of rabies testing procedures and limited testing facilities available. As a result, many rabid animals go undetected, posing a risk of disease spread. A technology that would allow rabies testing to be conducted anywhere and the introduction of rapid local control measures was needed.

Owing to a rapid diagnostic kit developed by Oita University and a local company, combined with a simplified specimen collection technique, it is now possible to diagnose rabid animals anywhere. Furthermore, an app was developed by the project to share information and provide alerts to responding personnel and residents after rabid animals have been diagnosed, enabling rapid coordination among various departments through the One Health approach. This innovative method has been implemented in 32 provinces across the Philippines, and used to identify more than 300 rabid animals in the field, contributing to rapid local containment and control of rabies.

The method is still being applied in many areas of the Philippines even after the project's completion, helping to combat rabies. Future expansion to areas





		×	Next-generation Smart Mining Plus for Sustainable Resources Development	Prof. KAWAMURA Yohei	Faculty of Engineering, Hokkaido University	Kazakhstan	_
	2024	×	Development of a Satellite Data- and a Regional Chemical Transport Modeling-based Air Pollution Assessment System and Formation of a Research Center for Air Pollution Studies	Associate Prof. NAWA Nobutoshi	Graduate School of Medical and Dental Sciences, Institute of Science Tokyo	Kyrgyz	-
		×	Utilization of Agricultural Wastes for Plastic Alternative Productions to Establish a Circular Economy	Prof. YAMAMOTO Mitsuo	Graduate School of Agricultural and Life Sciences, The University of Tokyo	Egypt	-
		×	Securing the Sustainability of Oasis Societies Associated with Water and Land Use in the Western Desert	Prof. IWASAKI Erina	Faculty of Foreign Studies, Department of French Studies, Sophia University	Egypt	-
	2023	1	Utilization Technology of Rubber Seeds for Green Products to Mitigate Global Warming and Plastic Pollution	Associate Prof. KANEHASHI Shinji	Graduate School of Engineering, Tokyo University of Agriculture and Technology	Thailand	p24
Envir		2	Risk-based Participatory WASH Planning and Citizen-data WASH Statistics for African Peri-urban Settlements	Associate Prof. HARADA Hidenori	The Center for African Area Studies, Kyoto University	Zambia	p24
onm		3	Establishing Sustainable Water Supply System Resilient to the Contamination of Drinking Water Sources	Prof. FILUOKA Takabiro	Graduate School of Engineering, Nagasaki University	VietNam	p25
ent/E	202	4	Development of Easy-operation High-tech Analytical Devices and Human Resource for Food Safety and	Prof. MAWATARI Kazuma	Graduate School of Information, Production and Systems, Waseda University	VietNam	p25
nergy	2	5	Development of Palm Oil Mill Effluent (POME) Treatment System for Sustainable Energy Production and Resource Decrease Hand on Material Innovation	Associate Prof. YOSHIDA	Graduate School of Engineering, Nagoya Institute of Technology	Malaysia	p26
(Glo		6	Strengthening Tropical Forest Resilience Based on Management and	Prof. Dr. TANI Naoki	Senior Researcher, Forestry Division, Japan International Research Center for	Indonesia	p26
oal - s	202	7	Establishment of Dick Management Platform for Air Pollution in Cambodia	Prof FURINCHI Masami	Agricultural Sciences (JIRCAS) Faculty of Geosciences and Civil Engineering Institute of Science and	Cambodia	n27
scale	-	, 		Prof VAMACIICHI Takachi	Engineering, Kanazawa University Graduate School of Engineering, Nagaoka	Viethlam	p27
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ronn	20	9	Efficiency and Impact of Salinization on Crop Productivity and Livelihood in Aral Sea region	Prof. TANAKA Kenji	Kyoto University	Uzbekistan	p28
nental	20	10	Establishment of Integrated Forest Management System Model for Conservation of Mountain Forest Ecosystems in the Andean - Amazon	Re-employed Research Specialist HIRATA Yasumasa	Forest Research and Management Organization, Forestry and Forest Products Research Institute	Peru	p28
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Ű	2019	12	Development of Management Systems for Multiple Utilization of Biodiversity in the Tropical Rainforests at the Producted Areas in Sarawak	Prof. ITIOKA Takao	Graguate School of Global Environmental Studies, Kyoto University	Malaysia	p29
		13	Establishment of a Sustainable Community Development Model based on Integrated Natural Resource Management Systems in Lake Malawi National Park	Distinguished Prof. SATO Tetsu	SDGs Promotion Office, Ehime University	Malawi	p30
		14	Sustainable Replantation of Oil Palm by Adding Value to Oil Palm Trunk through Scientific and Technological Innovation	Dr. KOSUGI Akihiko	Project Leader, Biological Resources and Post-harvest Division, Japan International Research Center for Agricultural Sciences	Malaysia	p30
	2018	15	Advanced and Sustainable Methods on Water Utilization Associated with Greening Potential Evaluation	Prof. SHIMADA Sawahiko	Department of Bioproduction and Environment Engineering, Faculty of Regional Environment Science, Tokyo University of Agriculture	Djibouti	p31
		×	Transforming the Cassava Production System in Vietnam by Establishing Regenerative Farming and Smart Starch Supply Chain Management	Prof. SHINANO Takuro	Graduate School of Agriculture, Hokkaido University	VietNam	-
	2024	×	Data Driven Dynamic Transport Management in Emerging Metropolis for Climate Change Mitigation	Prof. FUKUDA Daisuke	Graduate School of Engineering, The University of Tokyo	Thailand	—
		×	Valorization of Disposal Biomass for Chemical Production Based on Biorefinery Concept	Prof. YOKOI Toshiyuki	Institute of Integrated Research, Institute of Science Tokyo	Thailand	—
		16	Development and Social Implementation of Greenhouse Gas Emission Reduction Technologies in Paddy Fields of West Tonle San Lake by Establishing a Large Paddy Area Water Management System	Project Leader IZUMI Taro	Rural Development Division, Japan International Research Center for	Cambodia	p34
Envii	202	17	Development of Integrated Bio-circular Economy from Food and Energy Estate Waste Fraction to Biofuel and Bio-chemicrals	Prof. OGINO Chiaki	Department of Chemical Science and Engineering, Graduate School of	Indonesia	p34
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/Ener	2022	19	Integrated Sustainable Energy and Food Production from Microalgae-based	Team Leader MOCHIDA Keiichi	Center for Sustainable Resource Science, RIKEN	Indonesia	p35
) V8.		20	Development of New Ammonia Synthesis System using Renewable Energy and Hydrogen	Prof. AIKA Ken-ichi	National Institute of Technology (KOSEN),	South	p36
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eutra	2020	22	Development of the Duckweed Holobiont Resource Values towards Thailand BCG Economy	Prof.	Faculty of Environmental Earth Science,	Atrica Thailand	n37
ality)		23	Development of Low-Carbon Affordable Apartments in the Hot-Humid Climate of Indonesia towards	MORIKAWA Masaaki	Hokkaido University Graduate School of Advanced Science and		20
	2019	24	Paris Agreement 2030 Comprehensive Solutions for Optimum Development of Geothermal Systems in East African	Prof.	Engineering, Hiroshima University	Kenva	1036
		25	Rift Valley Development of Advanced Hybrid Ocean Thermal Energy Conversion (OTEC) Technology for Low Carbon	FUJIMITSU Yasuhiro Prof IKEGAMI Yasuvuki	Director, Institute of Ocean Energy,	Malaysia	n39
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		27	Rural Electrification and Value Addition of By-products	SAKO Takeshi	University	ianzania	p35
	202	×	Establishment of Research and Disease Control Systems for Eradication of Dourine	Prof. INOUE Noboru	Director General, National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine	Mongolia	-
	4	×	Creating Sustainable and Diversified Rice Farming System that Simultaneously Achieves Zero-hunger and Zero-emission	Project leader TSUJIMOTO Yasuhiro	Japan International Research Center for Agricultural Sciences	Madagascar	-
Biore	2023	28	Development of Sustainable Seaweed Based Functional Products for Promoting Blue Economy	Prof. ICHIKAWA Sosaku	Institute of Life and Environmental Sciences, University of Tsukuba	Indonesia	p42
sour		29	Establishment of an Alert System for Fusarium oxysporum f. sp. cubense, the Banana and Plantain Wilt Pathogen, and Mitigation Strategy of the Disease	Prof. ARIE Tsutomu	Institute of Agriculture, Tokyo University of Agriculture and Technology	Peru	p42
ces	2	30	Recovering High-Value Bioproducts for Sustainable Fisheries in Chile (ReBiS)	Prof. ONODA Akira	Faculty of Environmental Earth Science, Hokkaido University	Chile	p43
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2021	34	Development of Breeding and Water Management Technologies for Safe and Nutritious Rice Production	Associate Prof. KAMIYA Takehiro	Graduate School of Agricultural and Life Sciences, The University of Tokyo	Bangladesh	p45
	35	Establishment of Nitrogen-efficient Wheat Production Systems in Indo-Gangetic Plains by the Deployment of BNI-technology	Dr. TOBITA Satoshi	Specially Assigned Investigator, Japan International Research Center for Agricultural Sciences (JIRCAS)	India	p45
	36	Eco-engineering for Agricultural Revitalization Towards improvement of Human nutrition (EARTH): Water hyacinth to energy and agricultural crops	Prof. SATO Shinjiro	Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering, Soka University	Ethiopia	p46
2020	37	Project for Development of Complex Technologies for Prevention and Control of Rubber Tree Leaf Fall Diseases	Group Director MATSUI Minami	Center for Sustainable Resource Science, RIKEN	Indonesia	p46
	38	Development of Novel Disease Management Systems for Banana and Cacao	Prof. WATANABE Kyoko	College of Agriculture, Tamagawa University	Philippines	p47
	39	Restoration of Pastureland by Effective Usage of Wild Forage Plants based on Traditional Knowledge of Nomadic Mongolians	Project Researcher ASAMI Tadao	Graduate School of Agricultural and Life Sciences, The University of Tokyo	Mongolia	p47
2019	40	Strengthening of Resilience in Arid Agro-Ecosystems Vulnerable to Climate Change, Through Research on Plant Resources and Technological Applications	Dr. FUJITA Yasunari	Program Director, Food Program, Japan International Research Center for Agricultural Sciences (JIRCAS)	Bolivia	p48
	41	The Acceleration of Live-stock Revolution in aiming to be the Kitchen of the World: Development of Novel Technologies Yielding Stable Livestock Production and Food Safety	Specially Appointed Prof. MISAWA Naoaki	Center for Animal Disease Control (CADIC), University of Miyazaki	Thailand	p48
20	42	Development of Climate Change Resilient Innovative Technologies for Sustainable Wheat Production in the Dry and Heat Prone Agro-ecologies of Sudan and Sub-Saharan Africa	Specially Appointed Prof. TSUJIMOTO Hisashi	Arid Land Research Center, Tottori University	Sudan	p49
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N	×	Development of End-to-End Earthquake Early Warning and Response System	Researcher INOUE Hiroshi	Disaster Prevention Research Institute, Kyoto University	Indonesia	-
024	×	Development of Integrated Sediment and Environmental Management towards Sustainable Conservation, Disaster Risk Reduction, and Livelihood Improvements in Coastal Areas	Prof. TAJIMA Yoshimitsu	Department of Civil Engineering, Graduate School of Engineering, The University of Tokyo	Ghana	-
20	44	Disaster Risk Reduction of Widespread Volcanic Hazards in Southwest Pacific Countries	Associate Prof. ICHIHARA Mie	Earthquake Research Institute, The University of Tokyo	Tonga / Vanuatu / Fiii	
23	45	Compound Disaster Risk Reduction associated with Large Earthquakes and Tsunamis	Assistant Prof. NAKANO Genta	Disaster Prevention Research Institute, Kyoto University	El Salvador / Mexico	
202	46	Establishment of a Research and Education Complex for Developing Disaster-resilient Societies – MARTEST	Designated Prof. / Vice Director of IECMS KANEDA Yoshiyuki	Institute of Education, Research and Regional Cooperation for Crisis Management Shikoku (IECMS), Kagawa University	Türkiye	p52
Ñ	47	Real-Time Lightning 3D Imaging and Forecasting Project for Sustainable and Reliable Supply of Energy and Storm Disaster Early Warning	Prof. MORIMOTO Takeshi	Faculty of Science and Engineering, Kindai University	Malaysia	p52
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	53	Development of Early Warning Technology of Rain-Induced Rapid and Long-Travelling Landslides	Dr. KONAGAI Kazuo	Principal Researcher, Research Division, International Consortium on Landslides	Sri Lanka	p55
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202	×	The project for assessing genetic diversity of Vibrio cholerae using cloud computing and developing potential therapeutics against cholera	Prof. IIDA Tetsuya	Research Institute for Microbial Diseases, Osaka University	India	-
24	×	Project for the Sustainable Control of Zoonotic Malaria through an Integrated Approach	Prof. KANEKO Osamu	Institute of Tropical Medicine, Nagasaki University	Malaysia	-
2	×	Implementation of KITASATO-drug discovery and development in schistosomiasis endemic areas for its eradication	Prof. TSUJI Naotoshi	Kitasato University School of Medicine, The Kitasato Institute	Republic of Ghana	-
023	55	Co-designing neglected zoonosis intervention through One Health, education, and public-private partnership	Prof. MAKITA Kohei	School of Veterinary Medicine, Rakuno Gakuen University	United Republic of Tanzania	p60
202	56	Project for malaria and neglected parasitic diseases control and elimination using advanced research technique, communication tools and eco-health education	Dr. IWAGAMI Moritoshi	Chief, Department of Tropical Medicine and Malaria Research Institute, National Center for Global Health and Medicine (NCGM)	Laos	p60
2	57	Project for Integrated Research and Development towards Control and Elimination of Schistosomiasis	Prof. HAMANO Shinjiro	Department of Parasitology, Institute of Tropical Medicine, Nagasaki University	Kenya	p61
20	58	The project for One Health approach to control of Neglected Tropical Diseases with special attention on sandfly and mosquito borne infections in Türkiye	Associate Prof. SANJOBA Chizu	Laboratory of Molecular Immunology, Graduate School of Agricultural and Life Sciences, The University of Tokyo	Türkiye	p61
21	59	The project for institutional capacity building for eliminating Helicobacter pylori related death	Prof. YAMAOKA Yoshio	Department of Environmental and Preventive Medicine, Oita University Faculty of Medicine	Bhutan	p62
2020	60	The trilateral collaboration project for anti-infectious disease drug development: from lead optimization to preclinical testing	Prof. NOZAKI Tomoyoshi	Department of Biomedical Chemistry, Graduate School of Medicine, The University of Tokyo	Indonesia / Malaysia	p62
201	61	Interdisciplinary Research for an Integrated Community-directed Strategy for Sustainable Freedom from Malaria	Specially Appointed Prof. KANEKO Akira	Graduate School of Medicine, Osaka Metropolitan University	Kenya	p63
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👯 👯 👯 👯 New projects

	Carbon Dynamics of Amazonian Forests	Dr. ISHIZUKA Moriyoshi	Forestry and Forest Products Research Institute (FFPRI)		Brazil
	Study on the Impact of Glacier Retreat on Water Resource Availability for the Cities of La Paz and	Prof. TANAKA Hitoshi	Graduate School of Engineering. Tohoku I Iniversity		Bolivia
2009	El Alto Prediction of Climate Variations and its Application in the Southern African Region	Dr. YAMAGATA Toshio	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)		South
	Climate Variability Study and Societal Application through Indonesia – Japan "Maritime Continent COE" – Radar-Buoy Network Optimization for Rainfall Prediction	Dr. YAMANAKA Manabu	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)		Indonesia
	Wild Fire and Carbon Management in Peat-forest in Indonesia	Prof. OSAKI Mitsuru	Graduate School of Agriculture, Hokkaido University		Indonesia
20	Integrated Study Project on Hydro-Meteorological Prediction and Adaptation to Climate Change in Thailand (IMPAC-T)	Prof. OKI Taikan	Institute of Industrial Science, The University of Tokyo		Thailand
80	Eco-technological Management of Tuvalu against Sea Level Rise	Prof. KAYANNE Hajime	Graduate School of Science, The University of Tokyo	*2	Tuvalu
	Research on Ethanol Production from Sugarcane Wastes	Director, Dr. HIRATA Satoshi	Biomass Refinery Research Center, National Institute of Advanced Industrial Science and Technology (AIST)		Brazil
2017	Establishment of Environmentally Sound Management of Construction and Demolition Waste and Its Wise Utilization for Environmental Pollution Control and for New Recycled Construction Materials	Prof. KAWAMOTO Ken	Graduate School of Science and Engineering, Saitama University	*	VietNan
	Co-creation of Innovative Forest Resources Management Combining Ecological Methods and Indigenous Knowledge	Associate Prof. YASUOKA Hirokazu	The Center for African Area Studies, Kyoto University		Cameroo
	Development of Next-Generation Sustainable Land Management (SLM) Framework to Combat Desertification	Prof. TSUNEKAWA Atsushi	Arid Land Research Center, Tottori University		Ethiopia
20	Comprehensive Assessment and Conservation of Blue Carbon Ecosystems and Their Services in the Coral Triangle (Blue CARES)	Specially Appointed Prof. NADAOKA Kazuo	School of Environment and Society, Tokyo Institute of Technology		Philippine Indonesia
16	Strengthening of the Environmental Radiation Control and Legislative Basis for the Environmental Remediation of Radioactively Contaminated Sites	Prof. NANBA Kenji	Faculty of Symbiotic Systems Science / Institute of Environmental Radioactivity at Fukushima University		Ukraine
	Development and Implementation of New Damage Assessment Process in Agricultural Insurance as Adaptation to Climate Change for Food Security	Associate Prof. HONGO Chiharu	Integrated Research Field of Remote Sensing Division, Center for Environmental Remote Sensing, Chiba University		Indonesia
	Visualization of Impact of Chronic / Latent Chemical Hazard and Geo-Ecological Remediation	Prof. ISHIZUKA Mayumi	Graduate School of Veterinary Medicine, Hokkaido University	Ĭ	Zambia
2015	Advancing Co-design of Integrated Strategies with Adaptation to Climate Change	Prof. OKI Taikan	Institute of Industrial Science, The University of Tokyo		Thailand
	Establishment of Environmental Conservation Platform of Tonle Sap Lake	Associate Prof. YOSHIMURA Chihiro	School of Environment and Society, Tokyo Institute of Technology	<i>M</i> A	Cambodi
2014	Research on the Integration System of Spatial Environment Analyses and Advanced Metal Recovery to Ensure Sustainable Resource Development	Prof. ISHIYAMA Daizo	Graduate school of International Resource Science, Akita University	1	Serbia
2	Hydro-microbiological Approach for Water Security in Kathmandu Valley, Nepal	Prof. KAZAMA Futaba	Interdisciplinary Research Centre for River Basin Environment, Graduate Faculty of Interdisciplinary Research, University of Yamanashi		Nepal
013	Biodiversity Conservation in Amazon based on a New Concept of "Field Museum"	Prof. KOHSHIMA Shiro	Wildlife Research Center, Kyoto University		Brazil
	Development of Clean and Efficient Utilization of Low Rank Coals and Biomass by Solvent Treatment	Specially Appointed Prof. MIURA Koichi	Institute of Advanced Energy, Kyoto University		Thailand
20	Sustainable Management of Coral Reef and Island Ecosystems: Responding to the Threat of Climate Change	Associate Prof. NAKAMURA Takashi	Faculty of Science, University of the Ryukyus		Palau
)12	Development of the Atmospheric Environmental Risk Management System in South America	Prof. MIZUNO Akira	Institute for Space-Earth Environmental Research, Nagoya University	*	Argentin Chile
2011	Enhancing Resilience to Climate and Ecosystem Changes in Semi-Arid Africa: an Integrated Approach	Director, Prof. TAKEUCHI Kazuhiko	Integrated Research System for Sustainability Science(IR3S), The University of Tokyo		Ghana
	Development of Pollution Control and Environmental Restoration Technologies of Waste Landfill Sites Taking into Account Geographical Characteristics in Sri Lanka	Prof. TANAKA Norio	International Institute for Resilient Society, Saitama University		Sri Lanka
201	UASB - DHS Integrated System — A Sustainable Sewage Treatment Technology	Prof. HARADA Hideki	New Industry Creation Hatchery Center, Tohoku University		India
0	Establishment of Carbon-Cycle-System with Natural Rubber Joint Research Project on Formation Mechanism of Ozone, VOCs, and PM2.5 and	Prof. FUKUDA Masao	School of Engineering, Nagaoka University of Technology	*	VietNan
_	Proposal of Countermeasure Scenario Research Partnership for the Application of Low Carbon Technology for Sustainable	Director General,	Kansai Research Centre, Institute for Global Environmental		INICXICO
2009	Development Improving Sustainable Water and Sanitation Systems in Sahel Region in Africa: Case of Burkina	Prof. SUZUKI Yutaka	Strategies (IGES)		India Burkina
	Faso Sustainable Systems for Food and Bio-energy Production with Water-saving Irrigation in the	Prot. FUNAMIZU Naoyuki Prof. Emeritus	Graduate School of Engineering, Hokkaido University		Faso
20	Egyptian Nile Basin Conservation of Biodiversity in Tropical Forest through	SATOH Masayoshi	University of Tsukuba		Egypt
80	Sustainable Coexistence between Human and Wild Animals	Prof. YAMAGIWA Juichi	Graduate School of Science, Kyoto University		Gabon
	Research and Development for Water Reuse Technology in Tropical Regions	Prof. YAMAMOTO Kazuo	Environmental Science Center, The University of Tokyo		Thailand
2017	Thermoluminescence Techniques in Geothermal Exploration and Integrated Evaluation System of Geothermal Reservoir	Prof. Emeritus / Visiting Prof. TSUCHIYA Noriyoshi	uraouate School of Environmental Studies, Tohoku University President of National Institute of Technology (KOSEN), Hachinohe College	•	El Salvado
	Smart Transport Strategy for Thailand 4.0	Distinguished Prof. HAYASHI Yoshitsugu	Center for Sustainable Development and Global Smart City, Chubu University		Thailand
20	Comprehensive Conversion of Biomass and Waste to Super Clean Fuels by New Solid Catalysts	Prof. TSUBAKI Noritatsu	Faculty of Engineering, Academic Assembly, University of Toyama		Thailand
016	Smart Cities Development for Emerging Countries by Multimodal Transport System Based on Sensing, Network and Big Data Analysis of Regional Transportation	General Manager TSUBOI Tsutomu	Global Business Development Office, Nagoya Electric Works Co., Ltd.		India
20	Producing Biomass Energy and Material through Revegetation of Alang-alang (<i>Imperata Cylindrica</i>) Fields	Prof. UMEZAWA Toshiaki	Research Institute for Sustainable Humanosphere, Kyoto University		Indonesi
15	Production of Biofuels Using Algal Biomass	Assistant Prof. KANDA Hideki	Graduate School of Engineering, Nagoya University		South Africa
20	Technology Development of Steam-spot Detection and Sustainable Resource Use for Large Enhancement of Geothermal Power Generation in Indonesia	Prof. KOIKE Katsuaki	Graduate School of Engineering, Kyoto University		Indonesi
114	Sustainable Development of Rural Area by Effective Utilization of Bio-wastes with Highly Efficient Fuel Cell Technology	Associate Prof. SHIRATORI Yusuke	Faculty of Engineering, Kyushu University / International Research Center for Hydrogen Energy, Kyushu University	*	VietNan
201	Development of a Model System for Fluidized Bed Catalytic Gasification of Biomass Wastes	Associate Prof.	Graduate School of Science and Technology, Gunma University		Indonesi

ш	2(Graduate School of Life Science and Systems		
nviro	012	Promotion of Green Economy with Palm Oil Industry for Biodiversity Conservation	Prot. Shirai Yoshinito	Engineering, Kyushu Institute of Technology		Malaysia
nme		Drought-prone Regions of Botswana	Prof. AKASHI Kinya	Faculty of Agriculture, Tottori University		Botswana
nt / E	2011	Multi-beneficial Measure for Mitigation of Climate Change in Vietnam and Indochina Countries by Development of Biomass Energy	Visiting Researcher MAEDA Yasuaki	Graduate School of Humanities and Sustainable System Sciences, Osaka Prefecture University	*	VietNam
inerg		Pilot Study for Carbon Sequestration and Monitoring in Gundih Area, Central Java Province,	Specially Appointed Prof.	Center for the Promotion of Interdisciplinary Education		Indonesia
y (C		Indonesia	MAI SUUKA Ioshitumi	and Research, Kyoto University Graduate School of Agricultural and Life Sciences,		Manualdaria
arbor	-	Sustainable Jatropha Bioruei Production in Mozambique	Visiting Prof	The University of Tokyo		Mozambique
ו Ner	2010	Sahara Solar Energy Research Center	KOINUMA Hideomi	The University of Tokyo	e	Algeria
ıtrali		Development of Low Carbon Society Scenarios for Asian Regions	Prof. MATSUOKA Yuzuru	Graduate School of Engineering, Kyoto University	•	Malaysia
:y)		Development of New Biodiesel Synthesis in Thailand	Prof. ASAMI Kenji	The University of Kitakyushu		Thailand
	N	Strengthening Rice Breeding System based on Genomic Technology and Information in Myanmar	Prof. YOSHIMURA Atsushi	Faculty of Agriculture, Graduate School of Kyushu University	\star	Myanmar
	017	Development of Harmful Algal Bloom Monitoring Methods and Forecast	Prof.	Office of Academic Research and Industry-Academia- Government and Community Collaboration, Hiroshima	*	Chile
		System for Sustainable Aquaculture and Coastal Fisheries in Chile	MARUYAMA Fumito	University		
		Developing Countermeasures Against Striga to Conquer Poverty and Improve Food Security	SUGIMOTO Yukihiro	Graduate School of Agricultural Science, Kobe University		Sudan
	20	Breakthrough in Nutrient Use Efficiency for Rice by Genetic Improvement and Fertility Sensing Techniques in Africa	Dr. TSUJIMOTO Yasuhiro	Project Leader, Crop, Livestock and Environment Division, Japan International Research Center for Agricultural Sciences	•	Madagascar
	6	Project on Establishment of the Model for Fertilizing Cultivation Promotion Using Burkina Faso Phosphate Rock	Dr. NAGUMO Fujio	Senior Researcher, Crop, Livestock and Environment Division, Japan International Research Center for Agricultural Sciences	-*-	Burkina- Faso
		Optimizing Mariculture based on Big Data with Decision Support System	Prof. WADA Masaaki	School of Systems Information Science, Future University Hakodate		Indonesia
		Valorization of Bio-resources based on Scientific Evidence in Semi- and Arid Land for	Prof. ISODA Hiroko	Director, The Alliance for Research on the Mediterranean and North Africa / Faculty of Life and Environmental	\odot	Tunisia/
	-	Creation of New Industry Project for Development of Sericulture Research by Applying Biological Resources and Molecular	Group Leader	Sciences, University of Tsukuba		Morocco
	20	Genetics	KAMEDA Tsunenori	National Agriculture and Food Research Organization		Kenya
	15	Development and Dissemination of Sustainable Production System Based on Invasive Pest Management of Cassava in Vietnam, Cambodia and Thailand	Prof. TAKASU Keiji	Faculty of Agriculture, Kyushu University	*	VietNam/ Cambodia/ Thailand
		Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)	Prof. TODA Tatsuki	Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering, Soka University		Malaysia
	20	Establishment of Cryo-bank System for Vietnamese Native Pig Resources and Sustainable Production System to Conserve Bio-diversity	Advanced Researcher, Dr. KIKUCHI Kazuhiro	Institute of Agrobiological Sciences, NARO (National Agriculture and Food Research Organization) (NIAS)	*	Vietnam
	14	Development of Aquaponics Combined with Open Culture Adapting to Arid Regions for Sustainable Food Production	Prof. YAMADA Satoshi	Faculty of Agriculture, Tottori University		Mexico
<u>B</u> :	2013	Development and Adoption of Latin American Low-input Rice Production System through Genetic Improvement and Advanced Field-management Technologies	Prof. OKADA Kensuke	Graduate School of Agricultural and Life Sciences, The University of Tokyo		Colombia
oresc		Innovative Bio-production in Indonesia (iBiol): Integrated Bio-refinery Strategy to Promote Biomass Utilization using Super-microbes for Fuels and Chemicals Production	Prof. OGINO Chiaki	Graduate School of Engineering, Kobe University		Indonesia
urce	2012	The Project on Rice Research for Tailor-made Breeding and Cultivation Technology Development	Prof. YAMAUCHI Akira	Graduate School of Bioagricultural Sciences, Nagoya University		Kenya
		Diversity Assessment and Development of Sustainable Use of Mexican Genetic Resources	Prof. WATANABE Kazuo	Gene Research Center, University of Tsukuba	3	Mexico
		Flood- and Drought-Adaptive Cropping Systems to Conserve Water Environments in Semi-arid	Prof. IIJIMA Morio	Faculty of Agriculture, Kindai University	>	Namibia
	2011	Regions Development of Aquaculture Technology for Food Security and Food Safety in the Next	Research Prof.	Televe University of Maxing Colonge and Technology		Theiloud
		Generation	OKAMOTO Nobuaki	lokyo university ol marine science and technology		Inaliana
		Tropical Rain Forest and its Surrounding Areas of Cameroon: Integrating the Global Environmental Concerns with Local Livelihood Needs	Prof. ARAKI Shigeru	The Center for African Area Studies, Kyoto University		Cameroon
		Comparative Studies of the Reproductive Biology and Early Life History of Two Tuna Species	Prof. SAWADA Yoshifumi	Fisheries Laboratory, Kindai University	*	Panama
	2010	Development of Internationally Standardized Microbial Resource Center to Promote Life Science	Acting Director-General,	Biological Resource Center, National Institute of		Indonesia
	-	Research and Biotechnology The Project for the Development of Wheat Breeding Materials for Sustainable Food Production	Dr. SUZUKI Ken-ichiro	Iechnology and Evaluation (NITE) Kihara Institute for Biological Research		
		in Afghanistan	Prof. BAN Iomohiro	Yokohama City University		
		Development of Crop Genotypes for the Midlands and Mountain Areas of North Vietnam	Prof. YOSHIMURA Atsushi	Faculty of Agriculture, Kyusyu University	*	VietNam
		Innovation on Production and Automotive Utilization of Biofuels from Non-food Biomass	Dr. YOSHIMURA Yuji	Advanced Industrial Science and Technology (AIST)		Thailand
		Valorization of Bio-resources in Semi Arid and Arid Land for Regional Development	Prof. ISODA Hiroko	Tsukuba	۲	Tunisia
	N	Sustainable Integration of Local Agriculture and Biomass Industries	Prof. SAKODA Akiyoshi	The University of Tokyo	*	VietNam
	600	Development of Genetic Engineering Technology of Crops with Stress Tolerance against Degradation of Global Environment	Project Leader, Dr. NAKASHIMA Kazuo	Japan International Research Center for Agricultural Sciences (JIRCAS)		Brazil
		Improvement of Food Security in Semi-arid Regions of Sudan through Management of Root Parasitic Weeds	Prof. SUGIMOTO Yukihiro	Graduate School of Agricultural Science, Kobe University		Sudan
		Integrated Coastal Ecosystem Conservation and Adaptive Management under Local and Global Environmental Impacts	Prof. NADAOKA Kazuo	Graduate School of Information Science and Engineering, Tokyo Institute of Technology	>	Philippines
Disa	2017	Regional Resilience Enhancement through Establishment of Area–BCM at Industry Complexes in Thailand	Prof. WATANABE Kenii	Graduate School of Engineering, Nagoya Institute of Technology		Thailand
ster f	N	Project for Evaluation and Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan	Prof. AOKI Takayoshi	Graduate School of Design and Architecture, Nagoya City	Æ	Bhutan
reve	016	Development of Extreme Weather Monitoring and Information Sharing System in the Philippines	Prof.	Faculty of Science, Hokkaido University	>	Philippines
ntion		Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coast for Disaster	Associate Prof.	Disastar Dravantian Desearch Institute Kuste Heine		Mautas
and N	20	Mitigation	ITO Yoshihiro Emeritus Prof	Source Freedom fre		INEXICO
Nitiga	015	Integrated Research on Great Earthquakes and Disaster Mitigation in Nepal Himalaya	KOKETSU Kazuki	i ne university of Tokyo	2	Nepal
tion		Urban Areas and its Strategic Implementation towards Resilient Cities	Prof. NAKANO Yoshiaki	Institute of Industrial Science, The University of Tokyo		Bangladesh

	20	Application of State of the Art Technologies to Strengthen Research and Response to Seismic, Volcanic and Tsunami Events, and Enhance Risk Management	Prof. KUMAGAI Hiroyuki	Graduate School of Environmental Studies, Nagoya University		Colombia
	014	Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar	Prof. / Director MEGURO Kimiro	International Center for Urban Safety Engineering, Institute of Industrial Science, The University of Tokyo	×	Myanma
	20	Integrated Study on Mitigation of Multimodal Disasters caused by Ejection of Volcanic Products	Prof. IGUCHI Masato	Sakurajima Volcano Research Center, Disaster Prevention Research Institute, Kyoto University		Indonesi
)13	Research Project on Disaster Prevention/Mitigation Measures against Floods and Storm Surges in Bangladesh	Prof. / Director NAKAGAWA Hajime	Research Center for Fluvial and Coastal Disasters, Disaster Prevention Research Institute, Kyoto University		Banglades
	2012	Earthquake and Tsunami Disaster Mitigation in the Marmara Region and Disaster Education in Türkiye	Principal Research Scientist, Dr. KANEDA Vochiwuki	Japan Agency for Marine-Earth Science and Technology	C.	Türkiye
)isaste		Development of Landslide Risk Assessment Technology along Transport Arteries in Viet	Executive Director, Dr. SASSA Kvoji	International Consortium on Landslides (ICL)	*	VietNan
er Prev	2011	Research Project on Enhancement of Technology to Develop Tsunami-resilient Community	Deputy Director-General, Managing Director,	Asia-Pacific Center for Coastal Disaster Research, Port	*	Chile
/entic	-	Magmatic Fluid Supply into Lakes Nyos and Monoun, and Mitigation of Natural	Dr. TOMITA Takashi	School of Science,		Comono
on and	2010	Disasters through Capacity Building in Cameroon Research and Development for Reducing Geo-Hazard Damage in Malaysia caused by	Prof TOSAKA Hirovuki	Tokai University Graduate School of Engineering,		Malavsi
Miti		Landslide and Flood Enhancement of Earthquake and Volcano Monitoring and Effective Utilization of	Principal Senior Researcher,	The University of Tokyo Disaster Risk Research Unit. National Research Institute		iniaiayon
gatior		Disaster Mitigation Information in the Philippines	Dr. INOUE Hiroshi	for Earth Science and Disaster Prevention		Philippines
	200	Observational Studies in South African Mines to Mitigate Seismic Risks	OGASAWARA Hiroshi	Ritsumeikan University		Africa
	9	Information Network for Natural Disaster Mitigation and Recovery in India	Prof. MURAI Jun	Faculty of Environment and Information Studies, Kelo University		India
		Project for Enhancement of Earthquake and Tsunami Disaster Mitigation Technology in Peru	Prof. YAMAZAKI Fumio	Graduate School of Engineering, Chiba University	ف	Peru
		Multi-disciplinary Hazard Reduction from Earthquakes and Volcanoes in Indonesia	Prof. SATAKE Kenji	Earthquake Research Institute, The University of Tokyo		Indonesia
	2008	The Study on GLOFs (Glacial Lake Outburst Floods) in the Bhutan Himalayas	Prof. NISHIMURA Kouichi	Graduate School of Environmental Studies, Nagoya University		Bhutan
		Project on Risk Identification and Land-use Planning for Disaster Mitigation of Landslides and Floods in Croatia	Director, Prof. MARUI Hideaki	Research Institute for Natural Hazards & Disaster Recovery, Niigata University		Croatia
		Establishment of the "Bench-to-Bedside" Feedback System for	Director-Emeritus	AIDS Clinical Center, National Center for Global Health and Medicine	*	VietNan
	2018	Enidemiology of Zoopotic Virus Infections in Africa	Prof ΤΔΚΔΠΔ Δνατο	Division of Global Epidemiology, Research Center for	Ĩ	Zambia
		Epidemology of Zoonolic virus infections in Arrica	Prof	Zoonosis Control, Hokkaido University		DR Cong
	201	Integrated Research and Develomment Towards Chagas Disease Control	SHIMADA Junko	School of Health Sciences, Gunma University	-	El Salvado
	7	The Establishment of the One Health Prevention and Treatment Network Model for the Elimination of Rabies in the Philippines	Prof. NISHIZONO Akira	Department of microbiology, Faculty of Medicine, Oita University		Philippine
	2016	Establishment of a Research and Reference Collaborative System for the Diagnoses of Fungal Infections including Drug-Resistant Ones both in Brazil and Japan	Associate Prof. WATANABE Akira	Medical Mycology Research Center, Chiba University		Brazil
	201	Surveillance and Laboratory Support for Emerging Pathogens of Public Health Importance	Specially Appointed Prof. KIYONO Hiroshi	The Institute of Medical Science, The University of Tokyo	Ŧ	Ghana
	5	Establishment of Laboratory Surveillance System for Viral Diseases of Public Health Concern	Prof. YASUDA Jiro	Institute of Tropical Medicine, Nagasaki University		Gabon
		Integrative Application of Human and Pathogen Genomic Information for Tuberculosis Control	Prof. TOKUNAGA Katsushi	Graduate School of Medicine, The University of Tokyo		Thailand
	2014	Searching Lead Compounds of Anti-malarial and Anti-amebic Agents by Utilizing Diversity of Indonesian Bio-resources	Prof. NOZAKI Tomoyoshi	Graduate School of Medicine and Faculty of Medicine, The University of Tokyo		Indonesi
Ā		Ecological Studies on Flying Foxes and Their Involvement in Rabies-related and Other Viral Infectious Diseases	Prof. HONDO Eiichi	Graduate School of Bioagricultural Sciences, Nagoya University		Indonesi
fecti		Epidemiological Studies on Animal Protozoan Diseases in Mongolia and Development of Effective Diagnostics Measures	Prof. YOKOYAMA Naoaki	Obihiro University of Agriculture and Veterinary Medicine	Á I	Mongolia
ous Di	2013	Development of Innovative Research Technique in Genetic Epidemiology of Malaria and Other Parasitic Diseases in Lao PDR for Containment of Their Expanding Endemicity	Director, Dr. KANO Shigeyuki	Department of Tropical Medicine and Malaria, Research Institute, National Center for Global Health and Medicine		Laos
sease		Establishment of an Early-warning System for Infectious Diseases in Southern Africa	Prof. MINAKAWA Noboru	Institute of Tropical Medicine, Nagasaki University		South
es Co	201	Surveillance of Viral Zoonoses in Africa	Prof. TAKADA Ayato	Research Center for Zoonosis Control, Hokkaido	Ĩ	Zambia
ntro	2	Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children:	Prof. OSHITANI Hitoshi	Graduate School of Medicine, Tohoku University		Philippine
	20	Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines Determine the Outbreak Mechanisms and Development of a Surveillance Model for Multi-Drug	Guest Prof.	Osaka University Graduate School of Pharmaceutical		
	011	Resistant Bacteria	YAMAMOTO Yoshimasa	Sciences		VietNan
		Development of Rapid Diagnostics and the Establishment of an Alert System for Outbreaks of Yellow Fever and Rift Valley Fever in Kenya	Prof. MORITA Kouichi	Institute of Tropical Medicine, Nagasaki University	=i=	Kenya
	2010	Research and Development of Prevention and Diagnosis for Neglected Tropical Diseases, especially Kala-Azar	Associate Prof. NOIRI Eisei	The University of Tokyo Hospital		Banglades
		The Project for New Diagnostic Approaches in the Management of Fungal Infections in AIDS and Other Immunocompromised Patients	Prof. KAMEI Katsuhiko	Medical Mycology Research Center (MMRC), Chiba University		Brazil
	20	Identification of Anti-Hepatitis C Virus (HCV) Substances and Development of HCV and Dengue Vaccines	Prof. HOTTA Hak	Graduate School of Medicine/ School of Medicine, Kobe University		Indonesia
	60	The Studies of Anti-viral and Anti-parasitic Compounds from Selected Ghanaian Medicinal Plants	Prof. YAMAOKA Shoji	Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University	*	Ghana
		Prevention and Control of Leptospirosis in the Philippines	Prof. YOSHIDA Shin-ichi	Faculty of Medicine Sciences, Kyushu University	>	Philippine
		Research and Development of Therapeutic Products against Infectious Diseases, especially	Prof. IKUTA Kazuyoshi	Research Institute for Microbial Diseases, Osaka		Thailand
	2008	Lengue virus infection Establishment of Rapid Diagnostic Tools for Tuberculosis and Trypanosomiasis and Screening of Candidate Compounds for Tuppanosomiasis	Prof. SUZUKI Yasuhiko	Research Center for Zoonosis Control, Hokkaido University		Zambia

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