

Science and Technology Research Partnership for Sustainable Development (SATREPS)

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Science and Technology Research Partnership
for Sustainable Development Division, JST

September 15, 2009

Emerging Global Issues

The global issues are emerging and becoming a growing concern for humankind: they are appearing more complicated and difficult to resolve by one nation or one region.



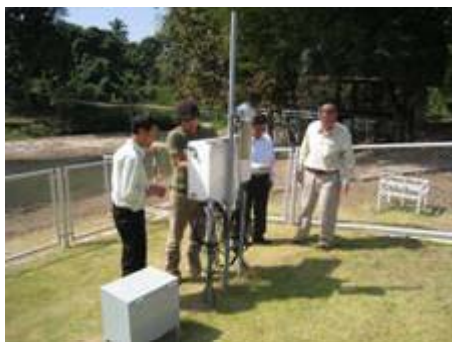
Many research issues and needs are in developing countries.

Traditional technology transfer is mainly focused for development purpose and that as such is not enough for addressing global issues

Science and technology cooperation between developed and developing countries

New knowledge and technologies are necessary to cope with climate change and other global issues.

Self-reliant capability in science and technologies is crucial for tackling challenges that developing countries are facing.



← Weather Observatory in Thailand

Laboratory Exercise → at University of Zambia, Zambia



← Fuel ethanol laboratory at Federal University of Rio de Janeiro, Brazil

Science and technology cooperation between developed and developing countries is needed to cope with global challenges.

Science and Technology Diplomacy

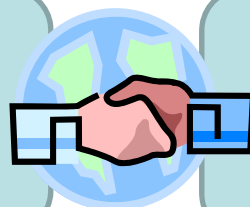
Council for Science and Technology Policy (CSTP)

**“Toward the Reinforcement of
Science and Technology (S&T) Diplomacy”**

(May 19, 2008)

**“ To link S&T with foreign policy
so as to achieve their mutual development.”**

**“Utilize S&T
for diplomatic purposes”**

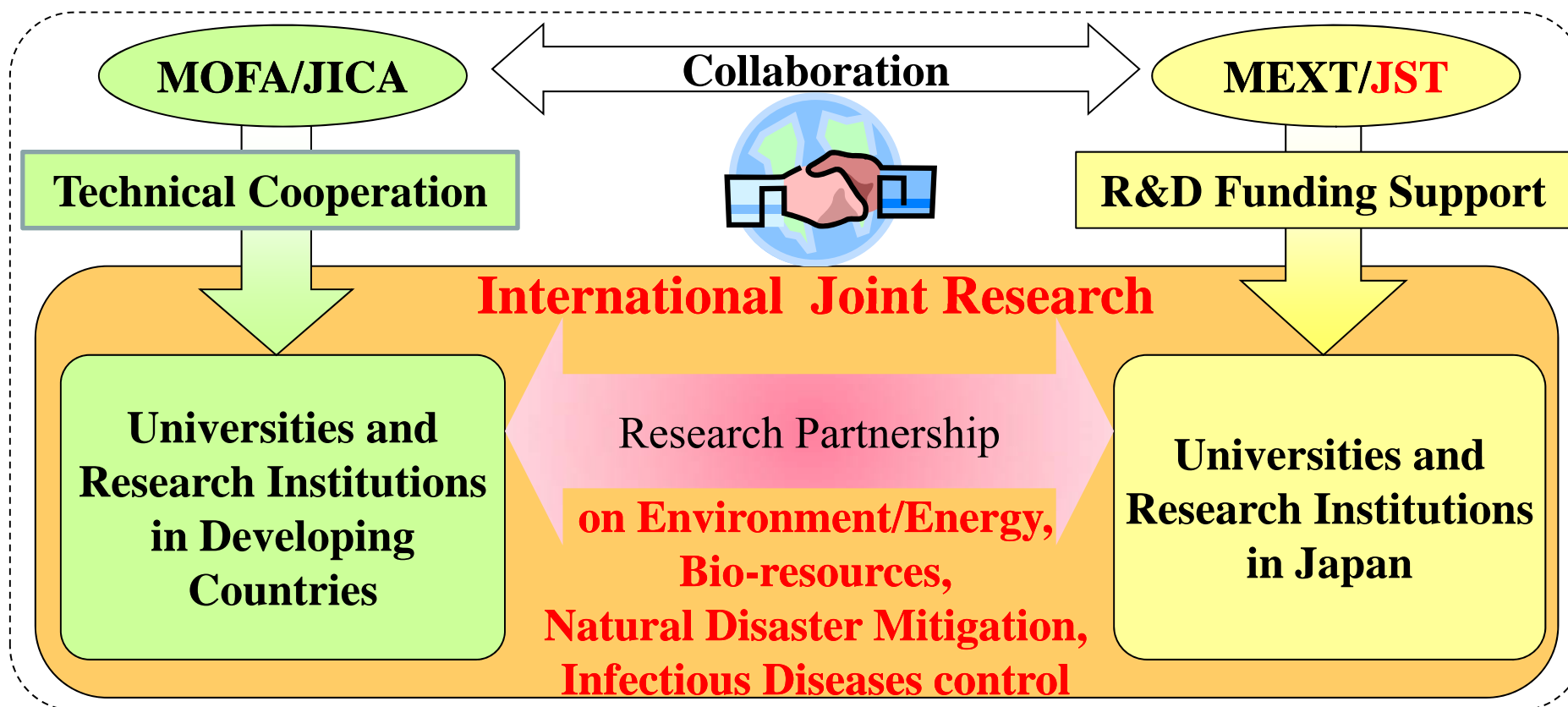


**“Utilize diplomacy
for the further
development of S&T”**

**Generating synergy between S&T and diplomacy
for resolving the global issues**

(Obtained from Provisional Translation of the Report)

Science and Technology Research Partnership for Sustainable Development (SATREPS)



MOFA: Ministry of Foreign Affairs MEXT: Ministry of Education, Culture, Sports, Science and Technology
 JICA: Japan International Cooperation Agency JST: Japan Science and Technology Agency

Memorandum of Understanding between JST and JICA

Japan Science and Technology Agency (JST) President, Koichi KITAZAWA, and Japan International Cooperation Agency (JICA) President Sadako OGATA officially signed the Memorandum of Understanding to implement the “Science and Technology Research Partnership for Sustainable Development (SATREPS)” program.



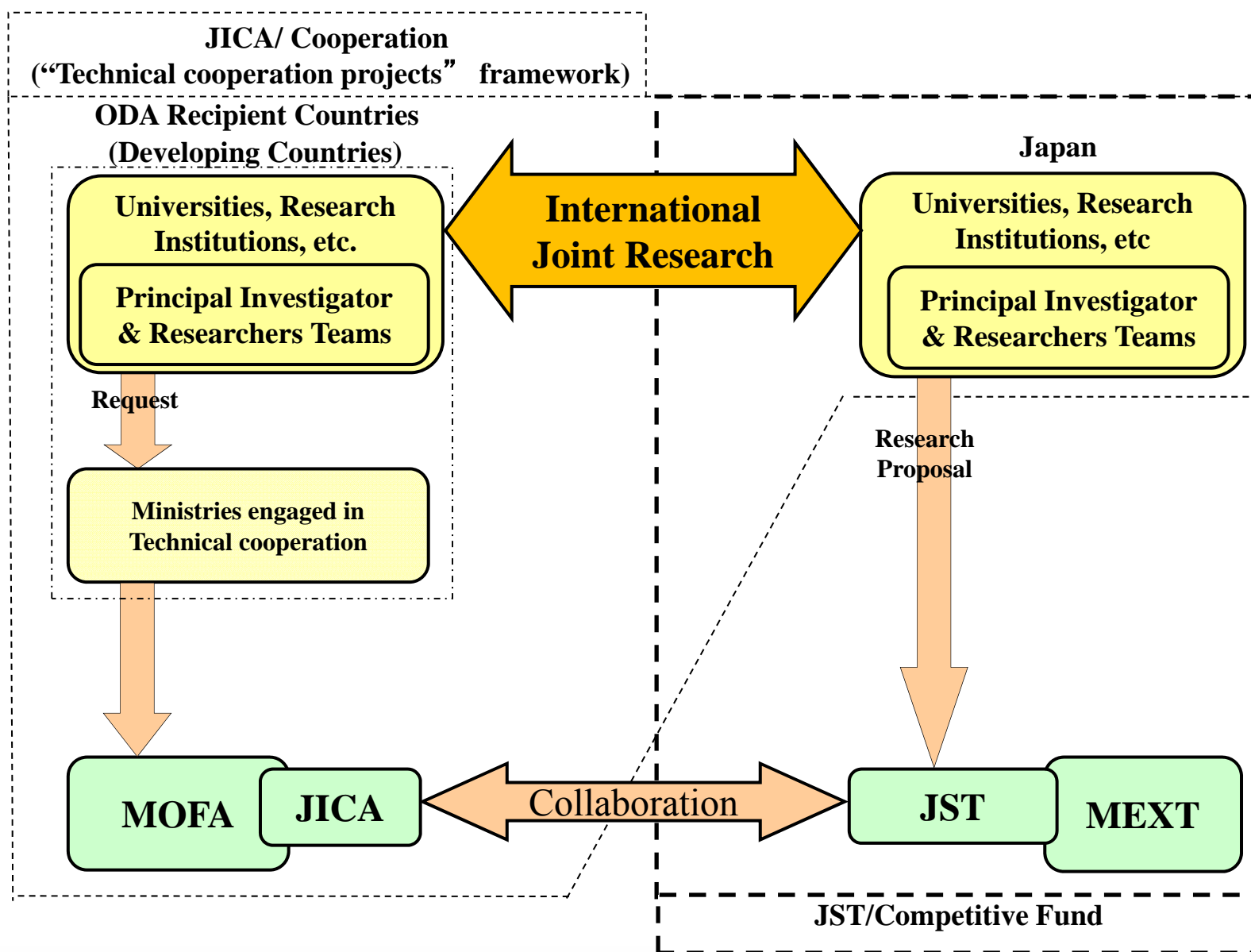
Photo by JICA (Jan.2009)

Objectives of SATREPS Program

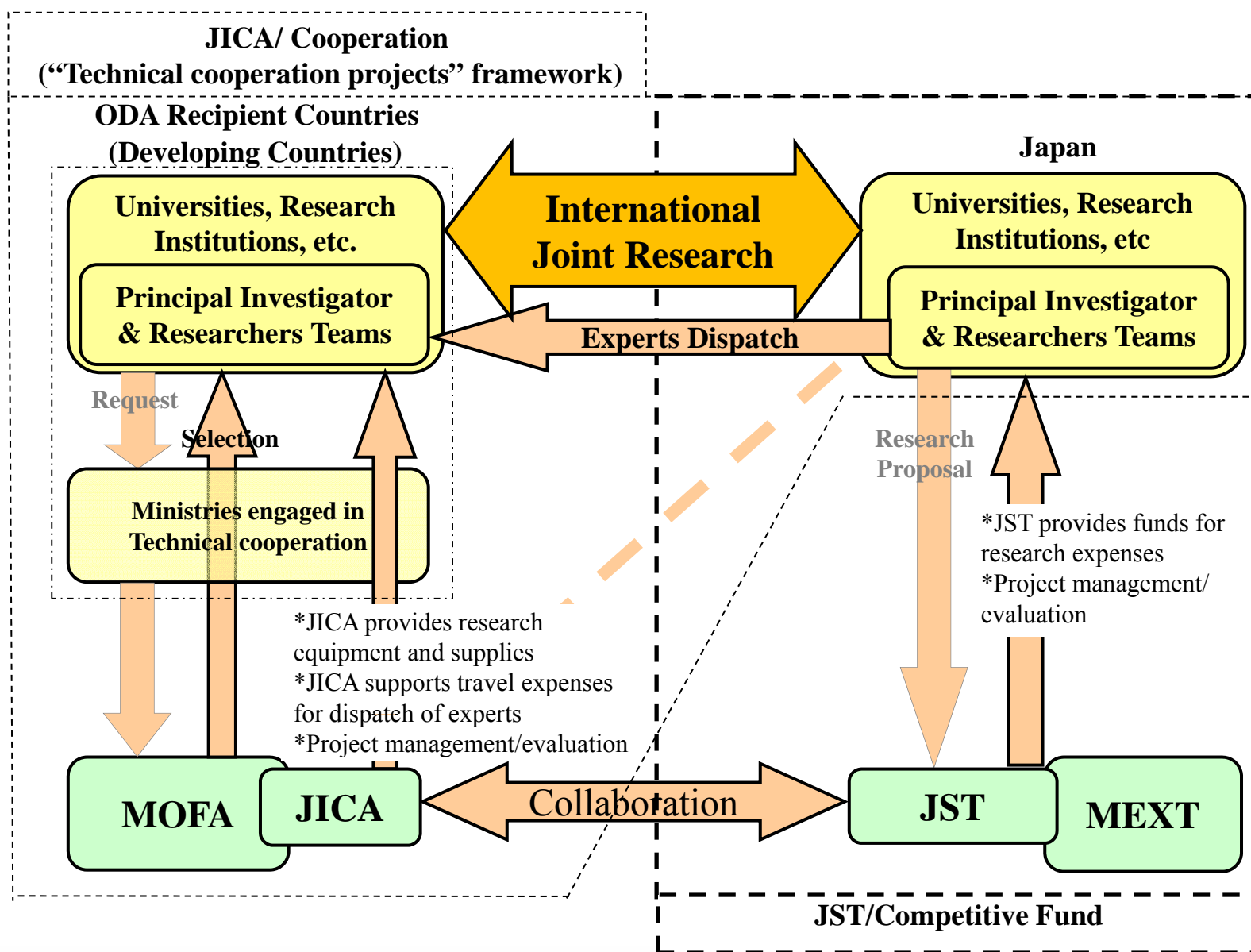
- To strengthen the international science and technology (S&T) cooperation between Japan and developing countries
- To advance scientific knowledge and technology for resolving the global issues we face
- To build capacities of counterpart researchers and research institutes for the sustained research activities

Research projects should meet the specific needs of the recipient developing country and be accompanied with a realistic plan for resolving the target issue.

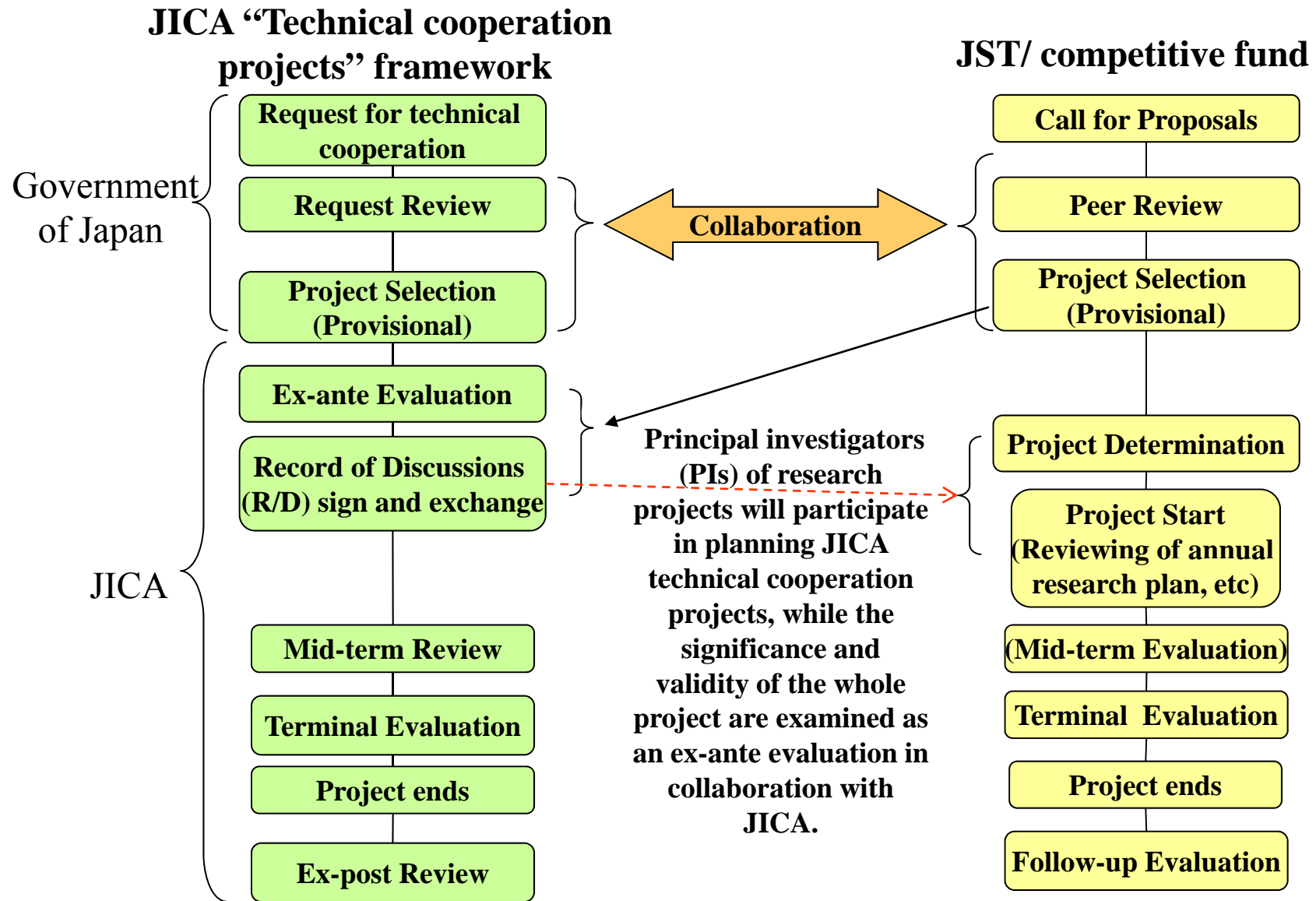
Project Scheme (1/2)



Project Scheme (2/2)



Project Flow



Program Description

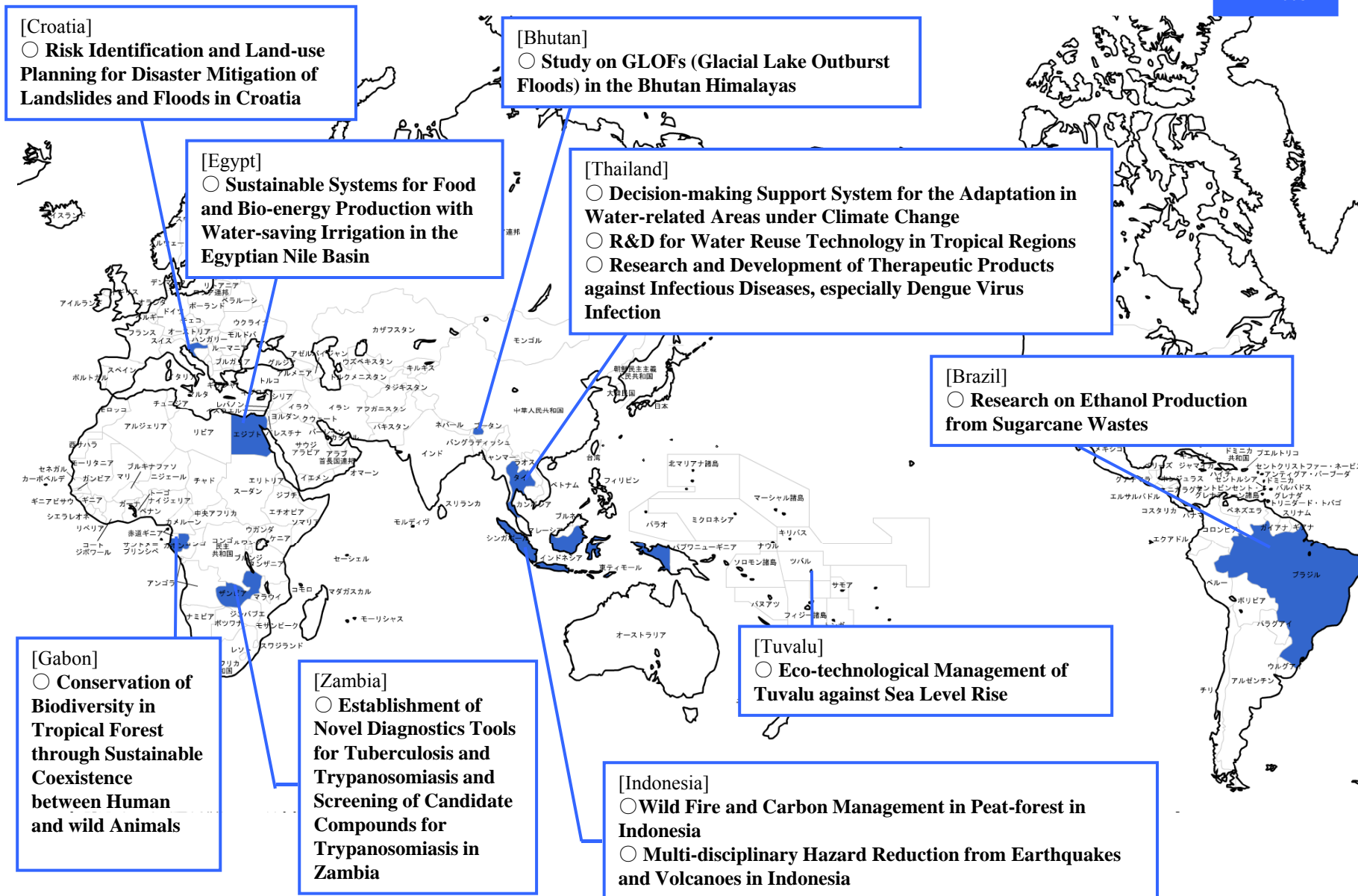
Call for Research Proposals	FY2008: April 3rd , 2008 (Thr) to May 22, 2008 (Thr) at 12:00 hour (noon)
Research Areas	Environment and Energy (Specific) “Climate Change” “Research contributing to adaptation to or mitigation of climate change”
	Environment and Energy (General) “Global-scale Environmental Issues” “Research contributing to the resolution of global-scale environmental issues”
	Natural Disaster Prevention “Research on natural disaster prevention measures attuned to the needs of developing countries”
	Infectious Diseases Control “Research on measures to address infectious diseases control attuned to the needs of developing countries”
Selection Process	The evaluation committee composed of expert reviewers appointed by JST conducts the selection in two steps – document screening and interview.
Research Period	Three to five (3-5) years
Amount of Research Expenses Supported By JST	About \$ 0.1 M – \$ 1.5 M * for the entire research period** (Total amount of research expenses supported for one project will depend on the research period.) About \$0.1 M- \$ 0.5 M * per year including 30% of the indirect costs ** *1\$=100yen, ** Except ODA budget

Results of FY2008 Competition

Research Areas	No. of Applications				No. of proposals for interview	No. of selected proposal	Selection Rate (%)
	Asia	Africa	Others	Total			
Environment and Energy 1 “Research contributing to adaptation to or mitigation of climate change ”	17	1	4	22	7	4	18.2
Environment and Energy 2 “Research contributing to the resolution of global-scale environmental issues ”	44	6	5	55	5	3	5.5
Natural Disaster Prevention “Research on natural disaster prevention measures attuned to the needs of developing countries”	22	3	3	28	9	3	10.7
Infectious Diseases Control “Research on measures to address infectious diseases control attuned to the needs of developing countries”	16	5	1	22	8	2	9.1
Total	99	15	13	127	29	12	9.4

Selected Projects for FY2008

FY 2008



Program Description

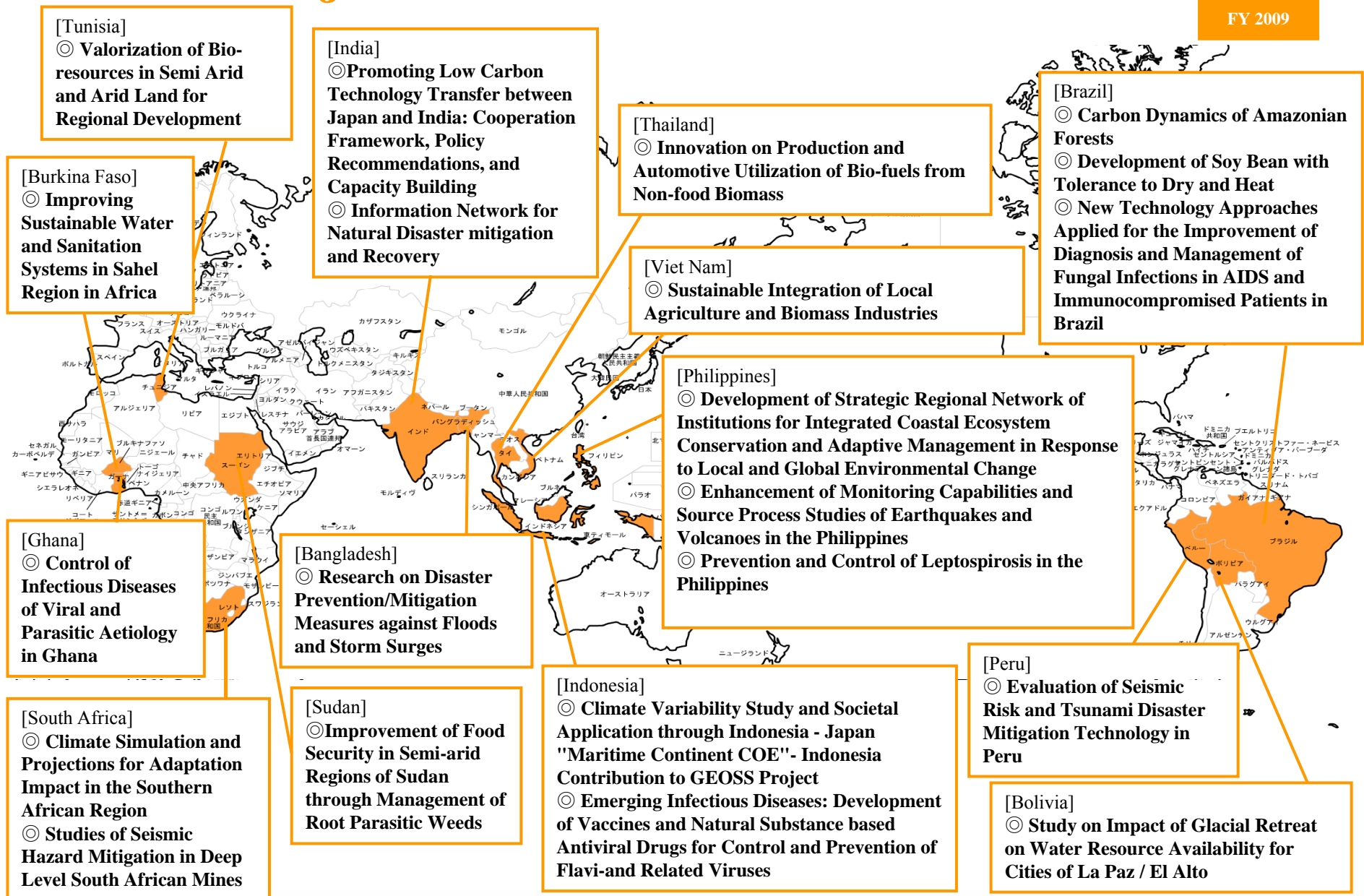
Call for Research Proposals	FY2009: September 10, 2008 (Wed) to November 19, 2008 (Wed) at 12:00 hour (noon)
Research Areas	Environment and Energy (Specific) “Climate Change” “Research contributing to adaptation to or mitigation of climate change”
	Environment and Energy (Specific) *From FY2009 “Bioresources” “Research contributing to conservation and sustainable utilization of bio-resources”
	Environment and Energy (General) “Global-scale Environmental Issues” “Research contributing to the resolution of global-scale environmental issues”
	Natural Disaster Prevention “Research on natural disaster prevention measures attuned to the needs of developing countries”
	Infectious Diseases Control “Research on measures to address infectious diseases control attuned to the needs of developing countries”
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Results of FY2009 Competition

Research Areas	No. of Applications				No. of proposals for interview	No. of selected proposal	Success Rate (%)
	Asia	Africa	Others	Total			
Environment and Energy 1 “Research contributing to adaptation to or mitigation of climate change ”	14	1	4	19	7	4	21.1
Environment and Energy 2 “Research contributing to sustainable utilization of bioresources ”	34	11	4	49	12	6	12.2
Environment and Energy 3 “Research contributing to the resolution of global-scale environmental issues ”	21	3	5	29	3	2	6.9
Natural Disaster Prevention “Research on natural disaster prevention measures attuned to the needs of developing countries”	17	2	3	22	8	5	22.7
Infectious Diseases Control “Research on measures to address infectious diseases control attuned to the needs of developing countries”	20	6	2	28	8	4	14.3
Total	106	23	18	147	38	21	14.3

Selected Projects for FY2009

FY 2009



[Tunisia]
 ◎ Valorization of Bio-resources in Semi Arid and Arid Land for Regional Development

[India]
 ◎ Promoting Low Carbon Technology Transfer between Japan and India: Cooperation Framework, Policy Recommendations, and Capacity Building
 ◎ Information Network for Natural Disaster mitigation and Recovery

[Thailand]
 ◎ Innovation on Production and Automotive Utilization of Bio-fuels from Non-food Biomass

[Viet Nam]
 ◎ Sustainable Integration of Local Agriculture and Biomass Industries

[Brazil]
 ◎ Carbon Dynamics of Amazonian Forests
 ◎ Development of Soy Bean with Tolerance to Dry and Heat
 ◎ New Technology Approaches Applied for the Improvement of Diagnosis and Management of Fungal Infections in AIDS and Immunocompromised Patients in Brazil

[Burkina Faso]
 ◎ Improving Sustainable Water and Sanitation Systems in Sahel Region in Africa

[Philippines]
 ◎ Development of Strategic Regional Network of Institutions for Integrated Coastal Ecosystem Conservation and Adaptive Management in Response to Local and Global Environmental Change
 ◎ Enhancement of Monitoring Capabilities and Source Process Studies of Earthquakes and Volcanoes in the Philippines
 ◎ Prevention and Control of Leptospirosis in the Philippines

[Ghana]
 ◎ Control of Infectious Diseases of Viral and Parasitic Aetiology in Ghana

[Bangladesh]
 ◎ Research on Disaster Prevention/Mitigation Measures against Floods and Storm Surges

[South Africa]
 ◎ Climate Simulation and Projections for Adaptation Impact in the Southern African Region
 ◎ Studies of Seismic Hazard Mitigation in Deep Level South African Mines

[Sudan]
 ◎ Improvement of Food Security in Semi-arid Regions of Sudan through Management of Root Parasitic Weeds

[Indonesia]
 ◎ Climate Variability Study and Societal Application through Indonesia - Japan "Maritime Continent COE"- Indonesia Contribution to GEOSS Project
 ◎ Emerging Infectious Diseases: Development of Vaccines and Natural Substance based Antiviral Drugs for Control and Prevention of Flavi-and Related Viruses

[Peru]
 ◎ Evaluation of Seismic Risk and Tsunami Disaster Mitigation Technology in Peru

[Bolivia]
 ◎ Study on Impact of Glacial Retreat on Water Resource Availability for Cities of La Paz / El Alto

Study on GLOFs (Glacial Lake Outburst Floods) in the Bhutan Himalayas



Glacial Lakes in Bhutan Himalayas

Lugge Glacial Lake partially collapsed in 1994, from which the muddy stream reached the ancient city of Punaka about 90km downstream. It destroyed bridges, waterwheels and houses and created much damage including about 20 casualties.



The Muddy Stream from Glacial Lake

Provided from ICIMOD(2007)

Outburst Flood (GLOF) is a major hazard concern faced by mountain communities in the Himalayas. The purpose of this research is to evaluate GLOFs' hazard level for mitigation. Its primary focus is on, for which the GLOF hazard level is believed to be high but yet information for mitigation is lacking. On the basis of satellite data analysis and field survey, we will complete a flood hazard map for the region and provide information necessary for the construction of an early warning system. Throughout the project it is strongly emphasized that technology on GLOF hazard mitigation is transferred to local organizations.

Example; Natural Disaster Prevention

Multi-disciplinary Hazard Reduction from



Earthquakes and Volcanoes in Indonesia



Five research theme are proposed as follows:

- (1) Geological surveys and geophysical monitoring will be conducted to forecast earthquakes, tsunamis and strong motion,
- (2) Short-term and long-term forecasts of volcanic eruptions will be made by strengthened activity monitoring, and we try to propose the evaluation method for volcanic eruption,
- (3) Engineering studies will be conducted to strengthen social infrastructure based on engineering technologies,
- (4) Social studies will be made to overcome vulnerability of local communities, and
- (5) Practical studies on education and outreach for community and also for restoration of community.

Finally, a trial will be made to establish a researchers' community, possibly including governmental officials, to autonomously and permanently discuss and develop disaster mitigation plan.



Process of Quasi-monotonic Events at Papandayan Volcano



Agreement between RISTEK and JICA on Research Collaboration

Eco-technological Management of Tuvalu against Sea Level Rise



Tuvalu consists of low-flatted islands formed by coral and foraminifera sand with an altitude of 1 to 2 meters, and is threatened by sea level rise. The aim of this project is to fully understand physical and ecological processes of island formation by creating a habitat-sedimentation map, and to construct robust islands against sea level rise through rehabilitation and promotion of sand production, transportation and sedimentation.



Erosion of the seaside by sea level rise

Japanese
Researcher and
Official from
Ministry of
Environment
in Tuvalu
discussed on
the damages of
coral reef.



Example ; Infectious Diseases Control

Research and Development of Therapeutic Products against Infectious Diseases, especially Dengue Virus Infection



This project aims to develop effective therapeutic products against emerging and re-emerging infectious diseases that are of great priority through the International alliance collaborative research between the Research Institute for Microbial Diseases, and the Department of Medical Sciences (DMSc), Ministry of Public Health. This project will concentrate in two lines: the first will mainly concern **the development of human monoclonal antibodies** and the second will cover **the development of therapeutic candidates from microorganisms such as bacteria as well as natural herbs**, which are prevalent. These developed agents are expected to be candidates with great effectiveness against dengue hemorrhagic fever as well as several other viral and bacterial infections. The successful candidates would be practically applied thereafter to clinical usage.

Discussion between Japanese Delegation and Officials from Thailand Ministry of Public Health



Laboratory at Faculty of Public Health, Mahidol University

Thank you for your attention



Please visit our website;
<http://www.jst.go.jp/global/english/index.html>

References

-Additional information on SATREPS -

Results of 2008 Competition (Overview)

Region and Countries of the Selected Projects

Region	Country	No. of projects selected
Asia	Republic of Indonesia	2
	Kingdom of Thailand	3
	Kingdom of Bhutan	1
Africa	Arab Republic of Egypt	1
	Gabonese Republic	1
	Republic of Zambia	1
Others	Federative Republic of Brazil	1
	Republic of Croatia	1
	Tuvalu	1
Total		12

Numbers and Regions of the Selected Projects for Each Research Area

Research Areas	Total No. of projects selected	Regions		
		Asia	Africa	Others
Environment and Energy 1 “Research contributing to adaptation to or mitigation of climate change”	4	2	0	2
Environment and Energy 2 “Research contributing to the resolution of global-scale environmental issues”	3	1	2	0
Natural Disaster Prevention “Research on natural disaster prevention measures attuned to the needs of developing countries”	3	2	0	1
Infectious Diseases Control “Research on measures to address infectious diseases control attuned to the needs of developing countries”	2	1	1	0
Total	12	6	3	3

Results of 2008 Competition (Selected Projects)

Environment/Energy 1 (Climate Change) / 2(Global-Scale Environment Issues)

	Project Title	Principal Investigator/Affiliation	Counterpart Country
Energy and Environment 1 (EE1) ↑	Decision-making Support System for the Adaptation in Water-related Areas under Climate Change	Prof. OKI Taikan /Institute of Industrial Science, The University of Tokyo	Kingdom of Thailand
	Eco-technological Management of Tuvalu against Sea Level Rise	Prof. KAYANNE Hajime /School of Science, The University of Tokyo	Tuvalu
	Research on Ethanol Production from Sugarcane Wastes	Director Dr. SAKANISHI Kinya /Biomass Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST)	Federative Republic of Brazil
	Wild Fire and Carbon Management in Peat-forest in Indonesia	Prof. OSAKI Mitsuru /Graduate School of Agriculture, Hokkaido University	Republic of Indonesia
EE2 ↓	R&D for Water Reuse Technology in Tropical Regions	Prof. YAMAMOTO Kazuo /Environmental Science Center, The University of Tokyo	Kingdom of Thailand
	Conservation of Biodiversity in Tropical Forest through Sustainable Coexistence between Human and wild Animals	Prof. YAMAGIWA Juichi / Graduate School of Science, Kyoto University	Gabonese Republic
	Sustainable Systems for Food and Bio-energy Production with Water-saving Irrigation in the Egyptian Nile Basin	Prof. SATOH Masayoshi /Graduate School of Life and Environmental Sciences, University of Tsukuba	Arab Republic of Egypt

Results of 2008 Competition (Selected Projects)

Natural Disaster Prevention

Project Title	Principal Investigator/Affiliation	Counterpart Country
Study on GLOFs (Glacial Lake Outburst Floods) in the Bhutan Himalayas	Prof. NISHIMURA Kouichi / Graduate School of Environmental Studies, Nagoya University	Kingdom of Bhutan
Multi-disciplinary Hazard Reduction from Earthquakes and Volcanoes in Indonesia	Prof. SATAKE Kenji/ Earthquake Research Institute, The University of Tokyo	Republic of Indonesia
Risk Identification and Land-use Planning for Disaster Mitigation of Landslides and Floods in Croatia	Prof. MARUI Hideaki /Research Center for Natural Hazards & Disaster Recovery, Niigata University	Republic of Croatia

Infectious Diseases Control

Project Title	Principal Investigator/Affiliation	ODA Recipient Country
Research and Development of Therapeutic Products against Infectious Diseases, especially Dengue Virus Infection	Prof. IKUTA Kazuyoshi/Research Institute for Microbial Diseases, Osaka University	Kingdom of Thailand
Establishment of Novel Diagnostics Tools for Tuberculosis and Trypanosomiasis and Screening of Candidate Compounds for Trypanosomiasis in Zambia	Prof. SUZUKI Yasuhiko/ Research Center for Zoonosis Control, Hokkaido University	Republic of Zambia

Results of 2009 Competition (Overview)

Region and Countries of the Selected Projects

Numbers and Regions of the Selected Projects for Each Research Area

Region	Country	No. of projects selected		Research Areas	No. of project selected						
					Asia	Africa	Others	Total			
Asia	People's Republic of Bangladesh	1	10	Environment and Energy 1 "Research contributing to adaptation to or mitigation of climate change"	1	1	2	4			
	India	2									
	Republic of Indonesia	2									
	Republic of the Philippines	3		Environment and Energy 2 "Research contributing to sustainable utilization of bioresources"	3	2	1	6			
	Kingdom of Thailand	1									
Socialist Republic of Viet Nam	1	Environment and Energy 3 "Research contributing to the resolution of global-scale environmental issues"	1	1	0	2					
Burkina Faso	1										
Republic of Ghana	1										
Republic of South Africa	2						Natural Disaster Prevention "Research on natural disaster prevention measures attuned to the needs of developing countries"	3	1	1	5
The Republic of Sudan	1										
Republic of Tunisia	1										
Others	Republic of Bolivia	1	5	Infectious Diseases Control "Research on measures to address infectious diseases control attuned to the needs of developing countries"	2	1	1	4			
	Federative Republic of Brazil	3									
	Republic of Peru	1									
Total		21		Total	10	6	5	21			

Results of 2009 Competition (Selected Projects)

Environment/Energy 1 (Climate Change)/ 3 (Global-Scale Environment Issues)

	Project Title	Principal Investigator/Affiliation	Counterpart Country
Energy and Environment 1 (EE1) ↑ ↓ EE3	Carbon Dynamics of Amazonian Forests	Research Coordinator ISHIZUKA Moriyoshi/ Forestry and Forest Products Research Institute	Federative Republic of Brazil
	Climate Simulation and Projections for Adaptation Impact in the Southern African Region	Head of Laboratory Dr. YAMAGATA, Toshio/ Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	Republic of South Africa
	Climate Variability Study and Societal Application through Indonesia - Japan "Maritime Continent COE"- Indonesia Contribution to GEOSS project	Principal Scientist YAMANAKA Manabu/ Application Laboratory, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	Republic of Indonesia
	Study on Impact of Glacial Retreat on Water Resource Availability for cities of La Paz / El Alto	Prof. TANAKA Hitoshi/ School of Engineering, Tohoku University	Republic of Bolivia
	Improving Sustainable Water and Sanitation Systems in Sahel Region in Africa	Prof. FUNAMIZU Naoyuki/ Graduate School of Engineering, Hokkaido University	Burkina Faso
	Promoting Low Carbon Technology Transfer between Japan and India: Cooperation Framework, Policy Recommendations, and Capacity Building	Director SUZUKI Yutaka/ Kansai Research Centre, Institute for Global Environmental Strategies (IGES)	India

*List of the selected projects is in alphabetical order of the project title.

*Project title is the title of the submitted request from counterpart countries and might be modified based on further discussions between JICA and counterpart countries.

Results of 2009 Competition (Selected Projects)

Environment/Energy 2 (Bioresources)

Project Title	Principal Investigator/Affiliation	Counterpart Country
Development of Soy Bean with tolerance to dry and heat	Prof. YAMAGUCHI-SHINOZAKI Kazuko/ Japan International Research Center for Agricultural Sciences (JIRCAS)	Federative Republic of Brazil
Development of Strategic Regional Network of Institutions for Integrated Coastal Ecosystem Conservation and Adaptive Management in Response to Local and Global Environmental Change	Prof. NADAOKA Kazuo/ Graduate School of Information Science and Engineering Department of Mechanical and Environmental Informatics, Tokyo Institute of Technology	Republic of the Philippines
Innovation on production and automotive utilization of bio-fuels from non-food biomass	Dr. YOSHIMURA Yuji/ Research Center for New Fuels and Vehicle Technology, National Institute of Advanced Industrial Science and Technology (AIST)	Kingdom of Thailand
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	The Republic of the Sudan
Sustainable Integration of Local Agriculture and Biomass Industries	Prof. SAKODA Akiyoshi/ Institute of Industrial Science, The University of Tokyo	Socialist Republic of Viet Nam
Valorization of Bio-resources in Semi Arid and Arid Land for Regional Development	Prof. ISODA Hiroko/ Graduate School of Life and Environmental Sciences, University of Tsukuba	Republic of Tunisia

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*Project title is the title of the submitted request from counterpart countries and might be modified based on further discussions between JICA and counterpart countries.

Results of 2009 Competition (Selected Projects)

Natural Disaster Prevention

Project Title	Principal Investigator/Affiliation	Counterpart Country
Enhancement of Monitoring Capabilities and Source Process Studies of Earthquakes and Volcanoes in the Philippines	Principal Senior Researcher INOUE Hiroshi/ Earthquake Research Department, National Research Institute for Earth Science and Disaster Prevention	Republic of the Philippines
Evaluation of Seismic Risk and Tsunami Disaster Mitigation Technology in Peru	Prof. YAMAZAKI Fumio/ Faculty of Engineering of Chiba University	Republic of Peru
Information Network for Natural Disaster Mitigation and Recovery	Prof. MURAI Jun/ Faculty of Environment and Information Studies, Keio University	India
Research on Disaster Prevention/Mitigation Measures against Floods and Storm Surges	Prof. NAKAGAWA Hajime / Disaster Prevention Research Institute of Kyoto University	People's Republic of Bangladesh
Studies of Seismic Hazard Mitigation in Deep Level South African Mines	Prof. OGASAWARA Hiroshi/ College of Science and Engineering, Ritsumeikan University	Republic of South Africa

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*Project title is the title of the submitted request from counterpart countries and might be modified based on further discussions between JICA and counterpart countries.

Results of 2009 Competition (Selected Projects)

Infectious Diseases Control

Project Title	Principal Investigator/Affiliation	Counterpart Country
Control of Infectious Diseases of Viral and Parasitic Aetiology in Ghana	Prof. YAMAOKA Shoji/ Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University	Republic of Ghana
Emerging Infectious Diseases: Development of Vaccines and Natural Substance based Antiviral Drugs for Control and Prevention of Flavi-and Related Viruses	Director/Prof. HOTTA Hak/ Center for Infectious Diseases, Graduate School of Medicine/School of Medicine Infectious Disease Center, Kobe University	Republic of Indonesia
New Technology Approaches applied for the Improvement of Diagnosis and Management of Fungal Infectious in AIDS and Immunocompromised Patients in Brazil	Prof. KAMEI Katsuhiko/ Medical Mycology Research Center (MMRC), Chiba University	Federative Republic of Brazil
Prevention and Control of Leptospirosis in the Philippines	Prof. YOSHIDA Shin-ichi/ Faculty of Medical Sciences, Kyushu University	Republic of the Philippines

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