Introduction of JST

Singapore Office,

Japan Science and Technology Agency

July 4, 2017

科学技術振興機構

About JST

On April 1, 2015, the government of Japan established the National Research and Development Agencies by transforming the former Independent Administrative Agencies for R&D, including JST.

Fundamental goal : Maximize research achievements

- greater flexibility in institutional management based on the characteristics of R&D agencies
- greater responsibility to maximize research achievements

Mission **Contribute to the creation of innovation**

Vision

I. **Achieving innovations in science and technology through creative research and development**

II. **Maximizing research outcomes by managing research resources on a virtual network**

III. **Developing Japan's infrastructure for science and technology so as to accelerate innovation in science and technology**

http://www.jst.go.jp/EN/about/message.html

STI Funding Bodies

Major funding bodies in Japan

	JSPS Japan Society for the Promotion of Science	JST Japan Science and Technology Agency	NEDO New Energy and Industrial Technology Development Organization	AMED Japan Agency for Medical Research and Development
Presiding Ministry	**MEXT**	**MEXT**	**METI**	**MEXT, METI, MHLW**
Mission	Promotion of academic research and STI human resource development	Promotion of STI and development of its environments and infrastructures	Development of new energy resources and energy conservation technologies	Promotion of medical R&D and development of its environments and infrastructures
Budget of FY2015 (Million USD*)	**3,014 (FY2014)**	**1,208**	**1,319**	**1,248**
Employees	**148**	**1,247**	**≈ 800**	**≈ 300**

* 1 USD = 100 JPY

Major Operation of JST

R&D Strategy | Strategic Basic Research | Innovative Research | Commercialization R&D

R&D Strategy Planning

- Center for R&D Strategy (CRDS)
- China Research and Communication Center (CRCC)
- Center for Low Carbon Society Strategy (LCS)

Promoting Creation of Science, Technology and Innovation

- Strategic Promotion of Basic Researches
- R&D based on University-Industry Collaboration
- Promotion of International S&T Joint Projects
- R&D System Reform
- Promotion of ImPACT, SIP

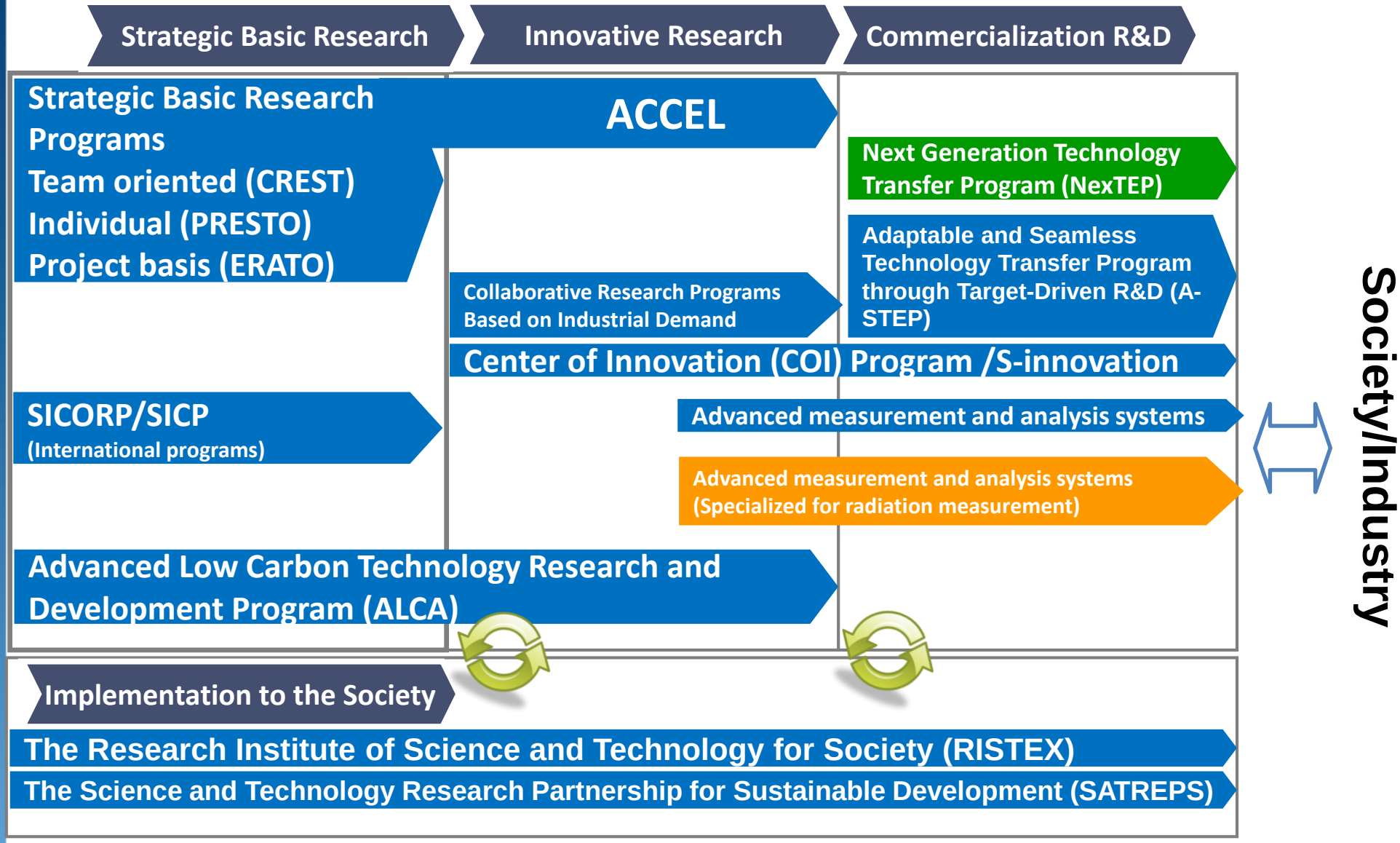
Total budget is about **100 billion yen**

S&T Infrastructure

Establishing an infrastructure to drive the generation of innovation
- Soft infrastructure to support innovation -

- Knowledge Infrastructure
- Next-Generation Development
- Science Communication

Overview of Major Funding Programs of JST



About Strategic Basic Research Programs

Strategic Objectives designated by the Government

Development and Operation of Virtual Networking Research Institutes

- Program Director oversees the overall system and considers management direction
- Establishment of Research Areas and Program Officers (Research Supervisors, etc.)best suited for achieving objectives
- Identification of researchers with exceptional pioneering qualities and originality, based on the Program Officers judgment
- Flexible, dynamic decision-making on research plans and research funding allocation in accordance with research progress achieved and other factors.

＜Research Programs＞

Creating the Seeds for New Technology (CREST, PRESTO, ERATO, ACCEL)

Advanced Low Carbon Technology Research and Development Program (ALCA)

Research Institutes of Science and Technology for Society (RISTEX)

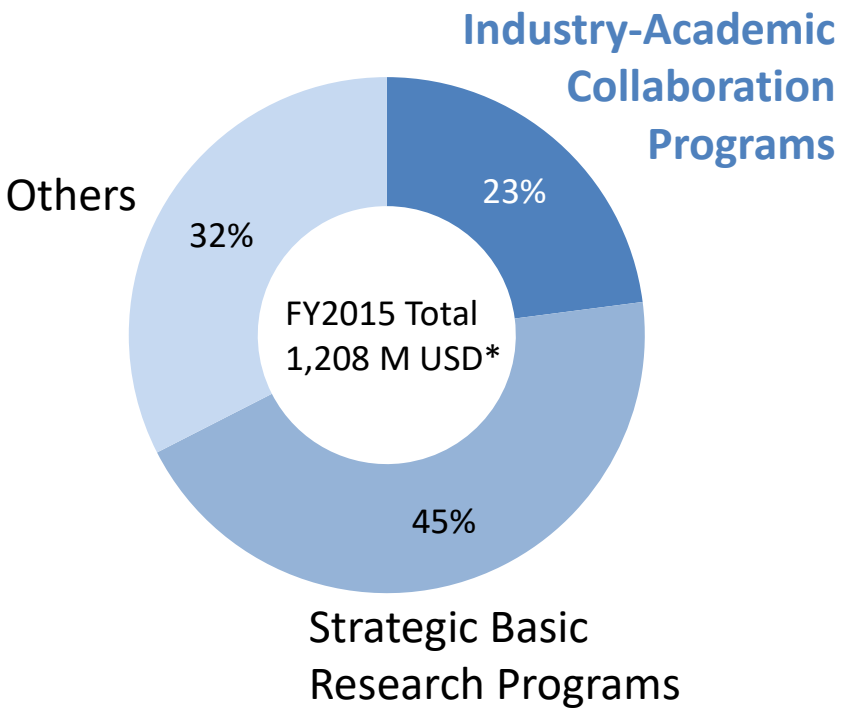
Prioritized Area

- Green Innovation
- Life Innovation
- Nanotechnology and Materials Science
- ICT
- S&T for Society and Social Infrastructure

Towards Science and Technology Innovation

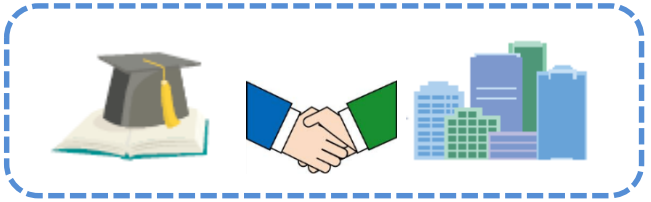
Industry-Academic Collaboration Programs

JST's budget & support



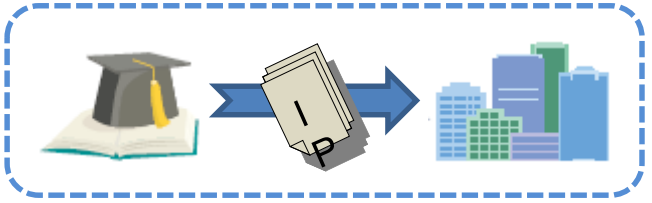
* 1 USD = 100 JPY

(a) Matching Support



(b) R&D Support

(c) IP Support

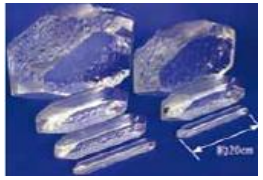


Remarkable Achievements of JST's Industrial-Academic Collaborative Projects

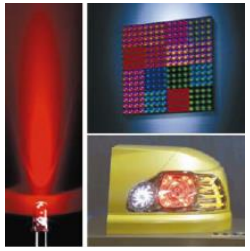
1960 1970 1980 1990 2000 2010

Since 1958

1959-
Artificial quartz



1972-1976
GaAlAsRed LED



1978-1980
Magnetic material
Amorphous metals

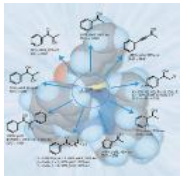
1980-
Natural interferonβ

1986-
GaN Blue LED

Nobel Prize in Physics (2014)

1991-1996
Bi-Based superconducting

1991- ▪1998-
NOYORI catalyst

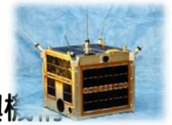


Nobel Prize in Chemistry (2001)

2001-2004
Water- ^{18}O for PET (positron-emission tomography)

2005-
Producing antibodies for therapeutic and industrial use

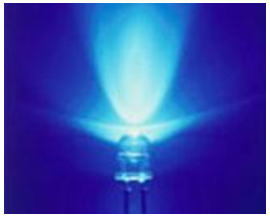
2006-
Low-cost ultrasmall satellite with short-term R&D



The total sales of these products are estimated to be upward of 6.8 billion USD from 1958 to 2013.

Our Recent Top Achievements



Prof. I. Akasaki
Prof. H. Amano
Prof. S. Nakamura

Blue Light-emitting Diode

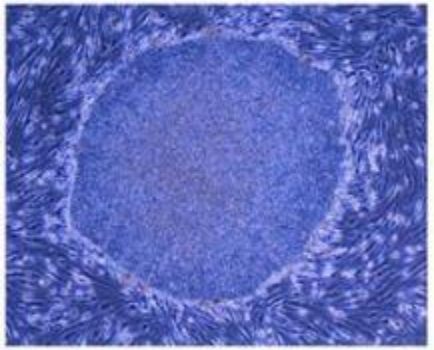
The Nobel Prize 2014

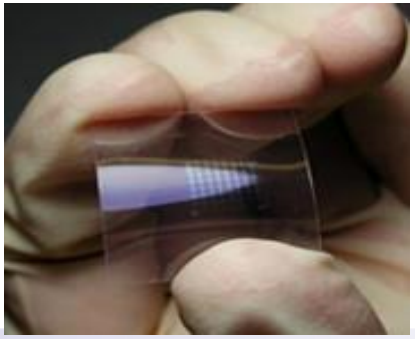
Prof. Shinya Yamanaka

iPS Cell

The Nobel Prize 2012

Discovery that mature cells can be reprogrammed to become pluripotent

Prof. Hideo Hosono

IGZO Oxide Semiconductor TFT

Invention of thin film oxide semiconductor transistor for high-resolution low-power consumption display

Global Activities of JST

Promote Science &Technology Diplomacy

Bilateral Joint Funding (SICP)
More than 400 projects
since 2003 with 23 countries/area

Satreps
Science and Technology For the Earth, for the Next Generation Official Development Assistance
e-ASIA JRP

BELMONT FORUM
CONCERT JAPAN
Connecting and Coordinating European Research and Technology Development with Japan
SAKURA SCIENCE

Maximize R&D outcomes through global activities

Bilateral Joint Funding (SICORP)
23 projects since 2009
with 6 countries and area

Globalization of Strategic Basic Research program

CREST
さきがけ PRESTO

Contribute to global platforms of funding agencies

GLOBAL RESEARCH COUNCIL

Funding Agency Presidents' Meeting In Kyoto

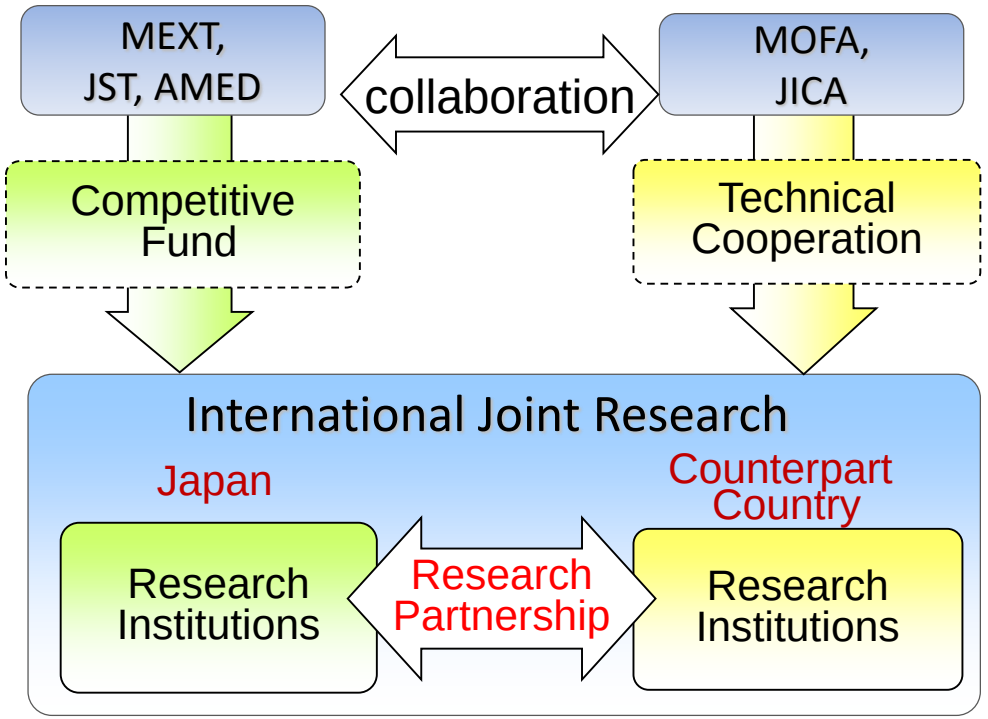
SATREPS

Aims of SATREPS

- Enhancing Cooperation in Science & Technology
- New Technology, New knowledge, Innovations
- Capacity Development

Practical Utilization/Implementation of research outcomes

SATREPS program structure



Research Areas

- **Environment and Energy**
- **Bio resource Utilization**
- **Disaster Prevention and Mitigation**
- **Infectious Diseases Control**

FY2015～ JST → AMED

※AMED：Japan Agency for Medical research and Development

Research Period

3-5 years

Research Funding

Approx. JPY96 million / project / year (USD* 960,000)

SATREPS

Number of the projects by ASEAN countries and research fields

		Environment	Low-carbon	Bio resources	Disaster Prevention and Mitigation	Infectious Diseases
Indonesia	16 ※2	4 ※2	4	3	2	3
Thailand	13 ※1	4	3	3 ※1	1	2
VietNam	10※1	2	2	4 ※1	1	1
Philippines	7 ※2	1 ※2		1	2	3
Malaysia	4		2	1	1	
Cambodia	2 ※2	1		1 ※1		
Myanmar	2			1	1	
Laos	1					1
Total	52 projects	12	11	14	8	10

※１） Collaborative research among **VietNam/Cambodia/Thailand**
※２） Collaborative research between **Philippines/Indonesia**

In total (since 2008) : 125 projects with 47 countries

SATREPS

2016 selected projects with ASEAN

Country	Project Title	Research Field
Indonesia	The Project for Development and Implementation of New Damage Assessment Process in Agricultural Insurance as Adaptation to Climate Change for Food Security	Environment
Indonesia	The Project for Marine Techno Park Computing System for Food Security and Sustainabilities (MARITEP-COMSYSS)	Bioresources
Indonesia/ Philippines	The Project for Comprehensive Assessment and Conservation of Blue Carbon Ecosystems and Their Services in the Coral Triangle (Blue CARES)	Environment
Philippines	The Project for Development of Extreme Weather Monitoring and Alert System	Disaster Prevention and Mitigation
Thailand	The Project for Comprehensive Conversion of Biomass and Waste to Super Clean Fuels by New Solid Catalysts	Low-carbon

SATREPS

2017 new projects with ASEAN

Country	Project Title	Research Field
Vietnam	"The Project for Establishment of Environmentally Sound Management of Construction and Demolition Waste and Its Wise Utilization for Environmental Pollution Control and for New Recycled Construction Materials"	Environment
Thailand	"The Project for e-Integrated Smart Transport to Dually Achieve CO2 Reduction and People's Well-Being to Support THAILAND 4.0"	Low-carbon
Myanmar	"The Project for ASEAN Network System for Rice Genomic Breeding"	Bioresources
Thailand	"The Project for Integrated Research on Resilience Enhancement of Industry Complexes Through Establishment of Area-BCM Operations and Development Toolkits for Disaster Risk Analysis and Information Sharing for the Wellbeing of Population at Risk"	Disaster Prevention and Mitigation
Philippines	"The Project for Development of an Improved Laboratory Surveillance System for Rabies Elimination"	Infectious Diseases (AMED)

e-ASIA Joint Research Program (e-ASIA JRP)

Objective

To develop a Science &Technology community

to promote innovation and

to resolve shared challenges in the East Asian region

through Research Cooperation

e-ASIA Joint Research Program (e-ASIA JRP)

Brief Summary

1) Formally inaugurated on June 28, 2012

2) Like a consortium of funding agencies

('Member Organizations')

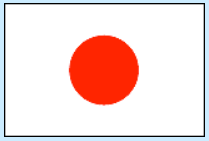
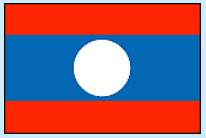
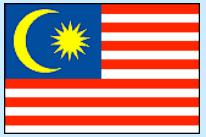
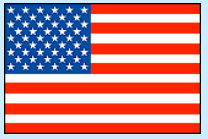
3) Supporting/funding international joint-research projects as well as facilitating researcher interaction in the East Asian region on a multilateral basis

4) Projects are selected through open Joint Call for Proposals (competitive funds)

e-ASIA Joint Research Program (e-ASIA JRP)

Current Member Organizations

- As of April 2017, we now have **19 Member Organizations from 13 countries**

 **Australia** NHMRC	 **Cambodia** MOH	 **Indonesia** RISTEKDIKIT	 **Japan** MEXT(JST) AMED	 **Lao PDR** MOST MOH	 **Malaysia** MOSTI	 **Myanmar** MOE
 **New Zealand** HRC	 **Philippines** DOST	 **Russia** RFBR	 **Thailand** NSTDA TRF TCELS ARDA	 **USA** NIAID(NIH) NCI(NIH)	 **Vietnam** MOST	**Prospective Guest Partner**  **Sri Lanka** NSF

e-ASIA Joint Research Program (e-ASIA JRP)

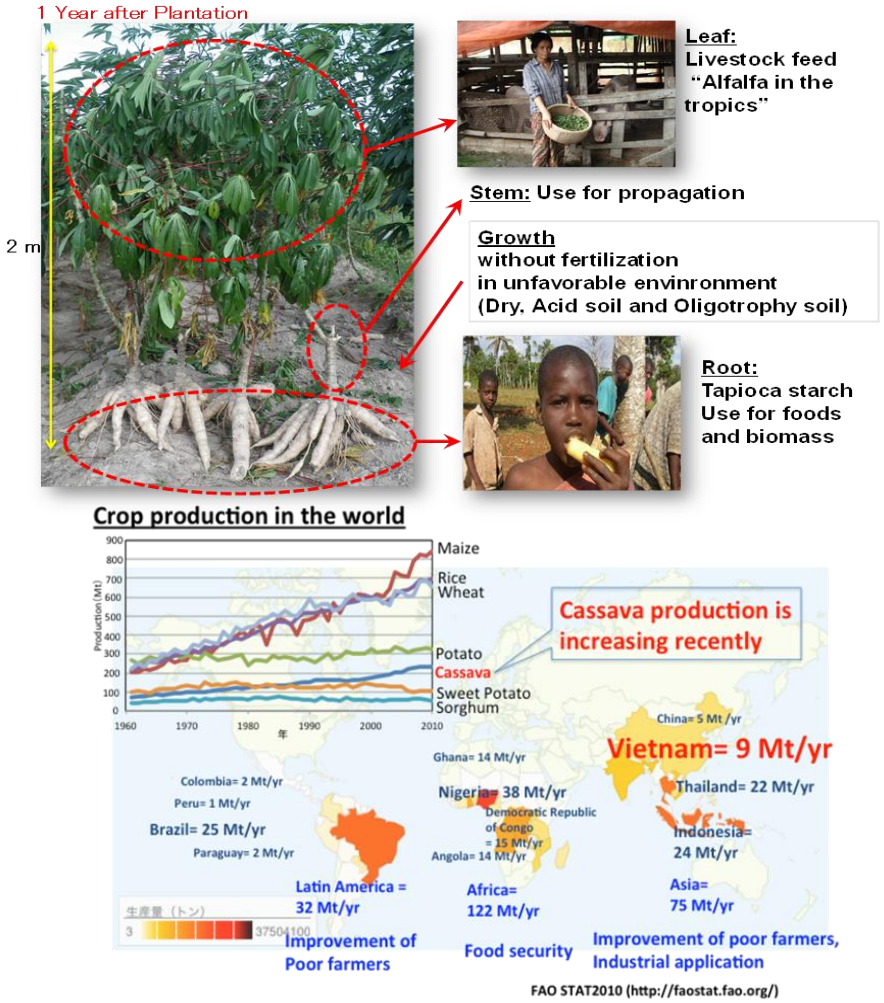
Calls for Proposals

	Participating Countries	Call	Topics	Award	Appl.
1st	JP, TH, VN	May, 2012	Nanotechnology / Materials	2	11
			Biomass and Plant Science	1	3
2nd	JP, VN, PH	Feb, 2013	Infectious Diseases	2	8
3rd	10 Orgs from 9 countries (JP, KH, ID, LA, MN, NZ, PH, TH, US)	Feb-Mar, 2014	Infectious Diseases	5	22
4th	JP, TH, PH	Apr-May, 2014	Nanotechnology / Materials	1	2
5th	15 Orgs from 11 countries (KH, ID, JP, LA, MN, NZ, PH, RU, TH, US, VN)	Aug-Oct, 2015	Intelligent Infrastructure for Transportation	1	3
			Disaster Risk Reduction	2	10
			Bioenergy	2	9
			Health Research	4	17
6th	12 Orgs from 10 countries (KH,ID, JP, MN, NZ, PH, RU, TH, US, VN)	Dec 2016 - Feb 2017	Health Research	Under selection Process	**16**
		Jan-March 2017	Functional Bio-Nanotechnology for Innovative Materials System		**18**
			Intelligent Infrastructure for Energy		**3**

e-ASIA JRP (e-ASIA Joint Research Program)

Advancement of Asian Cassava Molecular Breeding by Cutting-edge Technologies

FINISHED FY2012-2015



Advancement of molecular breeding by cutting-edge technologies

Dr. Motoaki Seki
RIKEN Plant Science Center
Japan

Molecular breeding and transcriptome study of Cassava disease

Dr. Ham Huy Le
Institute of Agricultural Genetics
Vietnam

Molecular breeding and transcriptome analysis for improving disease-resistant Cassava

Dr. Jarunya Narangajavana
Mahidol University
Thailand

Now Continuously Supported as part of a SATREPS Project (2016-)

Outline of SSP in 2016

Country name	open application	high school	STI officers	total
Brunei Darussalam	6	0	3	9
Cambodia	68	12	3	83
Indonesia	258	60	4	322
Lao PDR	34	12	3	49
Malaysia	280	36	3	319
Myanmar	181	36	3	220
Philippines	88	23	3	114
Singapore	73	13	3	89
Thailand	493	48	3	544
Vietnam	343	36	3	382
ASEAN total	1824	276	31	2131
SSP total	4,215	1062	242	5519

Ex:

Functionality sitology program, at Hiroshima University

Visiting Shinkansen Tunnel, at Nagasaki University

Items	Contents
(1)Eligible youth to be invited	①Youth who are basically under 40 years of age ②Youth who have never stayed in Japan before
(2)Term of visits	1 week ～ 3 weeks
(3)Sub-Programs	①Open Application Program (**with Japanese Partner**) ②Sakura Science High School Program (hosted by JST) ③Special Sakura Programs (ex. **ASEAN Secretariat special Program**)
(4)Cost	covered by JST (Int'l airfare, Accommodation, Meals, etc.)

ASEAN-JAPAN Workshop on Science, Technology, and Innovation

Brief presentations and Group discussion were held to exchange information and views for addressing common challenges and more effective promotion of STI cooperation between ASEAN and Japan.

【Japanese Presentations by 8 inst.】

〇Council for Science, Technology and Innovation, Cabinet Office (CSTI)
〇Ministry of Foreign Affairs of Japan (MOFA)
〇Ministry of Education, Culture, Sports, Science and Technology (MEXT)
〇National Institute of Science and Technology Policy(NISTEP)
〇Japan Science and Technology Agency(JST)
〇 Japan Society for the Promotion of Science (JSPS)
〇Japan Agency for Medical Research and Development(AMED)
〇New Energy and Industrial Technology Development Organization(NEDO)

【Theme of Group discussion】

1. STI Policy of Each member country including international collaboration
2. Funding policy in the field of STI of each country
3. Human resource development and higher education

At the workshop

Impression of workshop

From Thailand

It was a valuable experience that I got the opportunity to learn in many fields, including application of Japanese S&T.

I learned a lot such as Collaboration between universities and companies in and outside of Japan , Collaboration in the science and technology innovation field , How to strengthen the academy and Social problems accompanying development.

It was a precious opportunity to be able to expand the network with participants from ASEAN countries and people in Japan. Thank you very much for making such a really wonderful program.