



Japan's Scitek Diplomacy and Disaster Mitigation

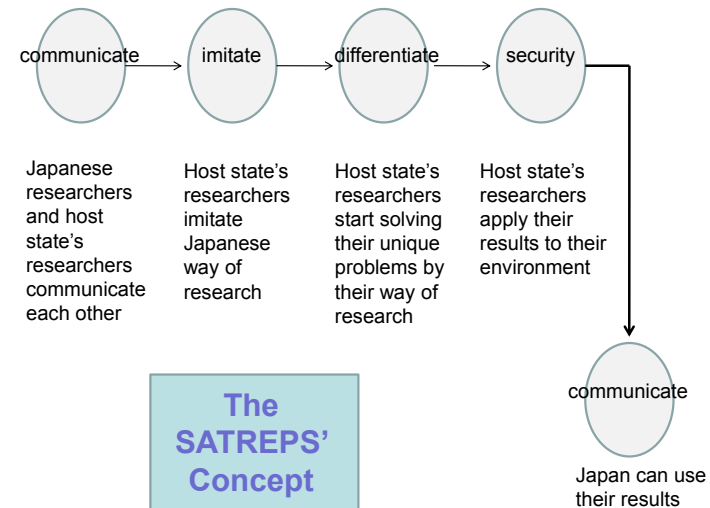
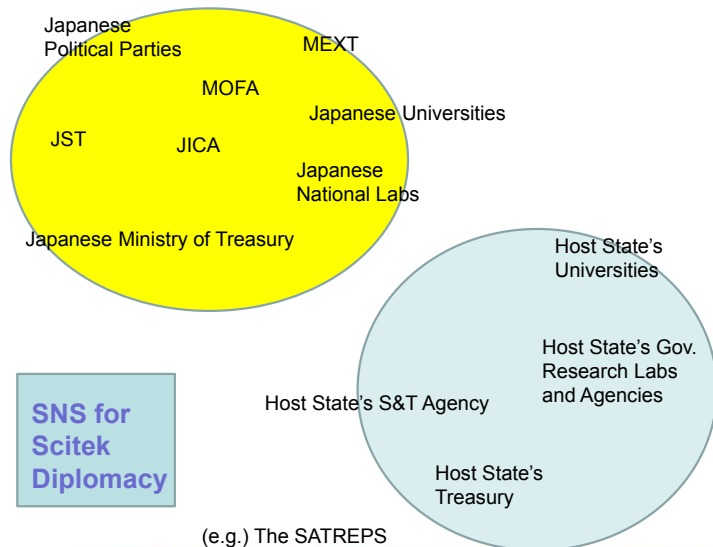
Taizo Yakushiji
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SATREPS



The Data

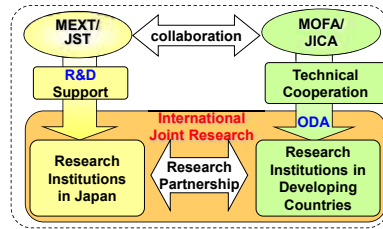
Japan's scitek cooperative agreements → with 42 countries
But she skews mostly toward the advanced countries.

- 1) Agreements with the developing countries
Japan 16.7%, US 48.6%, Germany 37.9%, France 48.1%
- 2) Agreements with Asian countries
Japan 11.9%, US 24.3%, Germany 20.7%, France 14.8%
- 3) Agreements with African countries
Japan 2.4%, US 13.5%, Germany 3.4%, France 11.1%



Creation of SATREPS

SATREPS = Science and Technology Research Partnership for Sustainable Development



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

Memorandum of Understanding between JST and JICA

Japan Science and Technology Agency (JST) Ex-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.



JST: Science Funding Agency for the government of Japan

JICA: ODA Agency for the government of Japan

Photo by JICA (Jan.2009)

Program Description

(1) Research Areas : 5 areas

■ **Environment and Energy**

• **Global-scale Environmental Issues** { Climate change mitigation & adaptation, Safe water supply, Biodiversity conservation..

• **Low-carbon Society** { Biomass energy, Energy efficiency, Renewable energy..

■ **Bio resource Utilization**

{ Breeding and cultivation technology, Bio resource management..

■ **Natural Disaster Prevention**

{ Natural disaster mechanisms (Earthquakes, Volcanic..), Natural disaster mitigation..

■ **Infectious Diseases Control**

{ Diagnostic tool, Vaccines, Therapeutic products development (Avian influenza, HIV/AIDS, Dengue fever..)

(2) Research Period : 3-5 years

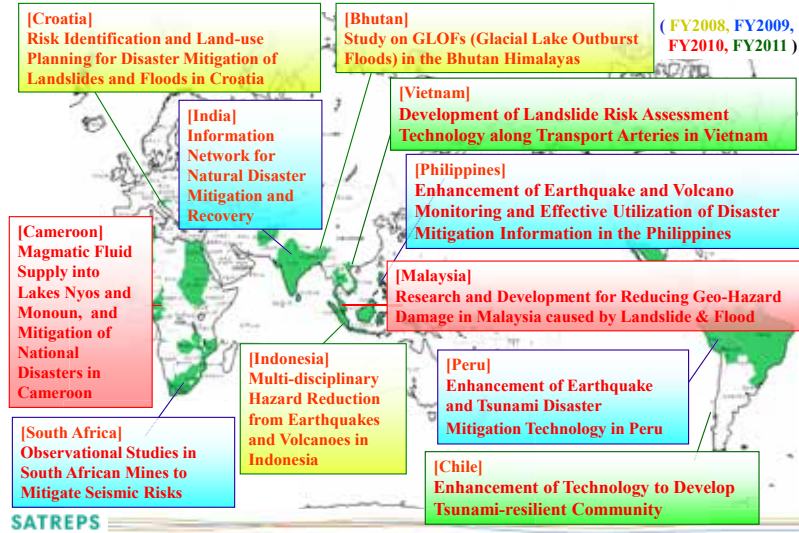
(3) Amount of Research Expenses : About \$ 1M/ year

60 projects in 33 countries since 2008.

Selected Project

Research Area	Region			Start (FY)				Total
	Asia	Africa	Others	2008	2009	2010	2011	
Climate Change				4	4	-	-	8
Energy Systems				-	-	4	3	7
Global Environment	31	18	11	3	2	4	2	11
Bio-resources				-	6	5	2	13
Natural Disaster				3	4	2	2	11
Infectious Diseases				2	4	2	2	10
Total	31	18	11	12	20	17	11	60

Projects Awarded (FY2008~2011) : Disaster Mitigation



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Additional (1)

Comparisons of Three NPP Accidents

1) Operational Mismanagement

TMI (March 28th of 1979)...fuel melt-down due to shut-down of cooling water

Chernobyl (April 26th of 1986)...blow-up of nuclear furnace itself due to accidental shut-down of water cooling system and malfunction of fuel control rods

2) Tsunami (The East Japan Earthquake, Richter Scale 9-10th Degree)

Fukushima Daiichi (March 11th of 2011)...leak of high radioactive water from nuclear furnace due to destruction of electric power supply causing malfunction of water cooling system

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Additional (2)

NPP and Its "Product Cycle"

- Japan's Energy self-sufficiency is less than 20%.
- According to "Product Cycle" (i.e. the new product, the maturing product, the standardized product), the current light water NPPs are the maturing/standardized products. A new NPP product includes the MSR (thorium) and 4S's. They are small-powered more versatile yet safer NPPs.

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Additional (3)

Philosophy for The Reconstruction

The "Hanshin-Awaji" Great Earthquake

Area's GDP = 20 trillion yen, 6400 died. Damages totaled 10 trillion yen.

The "East-Japan" Great Earthquake

Area's GDP = 30 trillion yen, 15,700 died. Damages totaled 17 trillion yen.

- The "New Energy" (i.e. solar panels, wind-mills, etc) accounts for only 20 % at most of total energy use of a country.
- The reconstruction needs a scientific and technological philosophy such as the environmental cities or the preservation of the "kisui" (mingling area of fresh water and sea water)

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Thank You