Science and Technology Research Partnership for Sustainable Development (SATREPS)

Jointly Creating Knowledge for International Development

Global-scale problems including global warming, food issue, natural disaster and infectious disease have been increasingly complex. In particular, the influence on developing countries with vulnerable socioeconomic infrastructures is critical. The international community is now required to work together to approach such problems, since it is hard for individual countries or regions to tackle them alone. In addition to traditional cooperation systems, innovation by science and technology is also expected to play an important role in providing solutions for responding to complex and growing issues.

Under this circumstance, and in accordance with the Japanese government's policy to promote science and technology diplomacy as set forth in the Council for Science Technology Policy, JICA initiated the cooperation[1] focusing on the utilization of science and technology for developing countries in 2008. Utilizing Japan's science and technology, JICA aims at creating newer "knowledge" by international joint research between Japan and developing countries, as well as solving global-scale issues by giving research outcomes back to the real world.

Science and Technology Research Partnership for Sustainable Development (SATREPS)

1. Overview

This program is designed to promote international joint research in which both Japanese research institutions and those of developing countries work together based upon the social needs in developing countries under the framework of JICA technical cooperation project. Its aims are to acquire new knowledge and to utilize research outcomes to the benefit of the society with a view to resolving global issues such as the environment and energy, biological resources, disaster prevention, and infectious diseases.

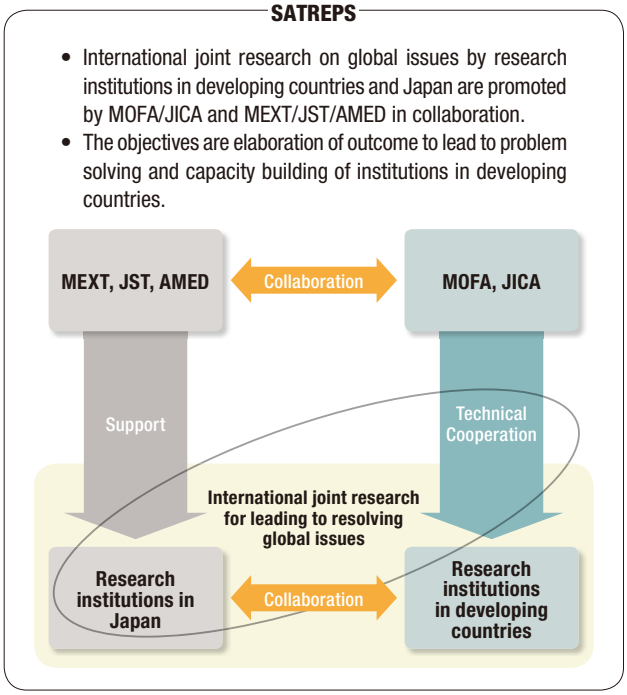
2. Objectives

1) Acquire new knowledge leading to resolving global issues and advancing science and technology.
2) Build a framework for sustainable activities to contribute to solutions for global issues.
3) Improve the development of human resources and self-reliant research capability of developing country.

3. Implementation System

SATREPS is jointly conducted by the Ministry of Foreign Affairs (MOFA), JICA, the Ministry of Education, Science and Culture (MEXT), the Japan Science and Technology Agency (JST), and the Japan Agency for Medical Research and Development (AMED)[2]. In SATREPS, research proposals that are submitted from Japanese research institutions to JST/AMED are examined to see if they are consistent with research requests from developing countries (i.e., matching system), from the perspective of science and technology and ODA. Then, adopted proposals come into practice by research institutions in both Japan and developing countries, under the framework of JICA technical cooperation project. JICA provides the assistance necessary to implement them as technical cooperation projects (e.g., dispatch of Japanese researchers, acceptance of researchers from developing countries, provision of equipment, and local activity expenses). On the other hand, JST/AMED support research activities necessary in Japan or third countries.

Implementation System of SATREPS



4. Eligible Fields of Research

Research objects are four fields: environment and energy, biological resources, disaster prevention, and infectious disease. For the environment and energy field, two research areas, (1) resolution of global-scale environmental issues and (2) advanced energy systems for low carbon society, have been set.

Achievements in Fiscal 2015

1. Selection of Research Projects

From September to October 2014, JICA and JST/AMED asked Japanese research institutions for SATREPS research proposals for fiscal 2015 and also conducted a survey of developing countries on research requests. As a result, there were 80 matches among

1. Initially, the science and technology cooperation had two schemes; "The Science and Technology Research Partnership for Sustainable Development (SATREPS)," which was a technical cooperation project model, and "The Dispatch Program for Scientific and Technology Researchers," which was an individual expert dispatch model. However, the latter scheme was terminated in 2012.
2. With the April 2015 establishment of the Japan Agency for Medical Research and Development (AMED) as a public institution to integrally conduct medical research and development in Japan, activities in the field of infectious diseases were transferred from JST to AMED. SATREPS projects in this field are implemented by JICA in cooperation with AMED.

103 proposals and 96 requests, and 14 research proposals were finally selected.

Research proposals adopted include five environment and energy fields (three environment areas and two low carbon areas), four biological resources fields, three disaster prevention fields, and two infectious disease fields. Viewed geographically, these proposals consist of seven in Asia, one in Central and South America, five in Africa, and one in the Middle East and Europe.

2. Implementation Status

With new 14 proposals, SATREPS has adopted 101 research projects since 2008 when the project started, in 43 countries including two new entrants in 2015.

These research proposals include 40 environment and energy fields, 23 biological resources fields, 19 disaster prevention fields, and 19 infectious disease fields. Viewed geographically, these proposals consist of 56 in Asia (44 in Southeast Asia and Oceania, one in East Asia, and 11 in South Asia), 16 in Central and South America, 22 in Africa, and seven in Middle East and Europe. In terms of percentage of the total, the Asian region is the largest with 55%, followed by the African region with 22%.

On the other hand, 14 collaborative research projects were finished in fiscal 2015. SATREPS has produced many results in each field. These outcomes have been contributed to the real world.

Case Study **SATREPS Projects Conducted in Latin America and the Caribbean Region: Mexico, Colombia, Peru, and Chile**

Researchers from Japan, Latin America, and Caribbean Countries Work on Countermeasures against Earthquake and Tsunami Disasters

Earthquakes, tsunamis, and other natural disasters frequently occur in the countries in Latin America and the Caribbean region, lying on the circum-Pacific seismic zone. The Chile Earthquake in 1960 triggered a tsunami that reached Japan and caused damage to the Sanriku area. In the Great East Japan Earthquake of 2011, tsunami warnings were issued to Pacific coastal areas in Latin America and the Caribbean region. Japan and the nations in the region that border the Pacific Ocean have further strengthened cooperation relationships for disaster prevention and mitigation.

Sharing of Research Outcomes in the Region and Promoting Regional Cooperation

Latin America and the Caribbean region, especially countries from Mexico to Chile that have long coastlines, are constantly conscious of crises arising from earthquake and tsunami disasters. JICA has long provided technical assistance to tackle such disasters.

JICA's experience in this area brought a key concept for developing hazard maps based on scientific analysis of occurrence and damage estimates of earthquakes and tsunamis in order to take effective disaster prevention measures. Accordingly, for creating hazard maps, it was considered necessary to apply science and technology support and improve research capabilities. JICA finally began to receive requests for SATREPS cooperation from nations in the region.

SATREPS researchers contributing to the KIZUNA Project

In Mexico, a SATREPS project was initiated in 2015 that is mainly led by Kyoto University. Other joint research activities also have been carried out through collaboration among counterpart organizations of partner countries in the region and representative research institutions in Japan, including Nagoya University working with Colombian organizations, Chiba University with Peruvian organizations, and the Port and Airport Research Institute with Chilean organizations.

In addition to research activities conducted within the countries, these projects are also intended to strengthen regional cooperation by hosting seminars and sharing research outcomes with project-related researchers and officials responsible for disaster control throughout the region. This science-based initiative is an opportunity for participants having similar concerns over earthquake and tsunami countermeasures to learn about case studies and good practices in other nations and get tips on disaster prevention measures for their countries. Since the damage from disasters may cross national borders and spread widely, neighboring countries have also formed a cooperation system to deal with these situations.

In order to boost regionwide cooperation, JICA started a new technical cooperation project, the KIZUNA Project (Disaster Risk Reduction Training Program for Latin America and the Caribbean; *kizuna* means "bonds of friendship" in Japanese). The project was launched at the Third UN World Conference on Disaster Risk Reduction held in Sendai City in March 2015. This Chile-based technical cooperation project is expected to further promote and leverage the SATREPS research outcomes of each country for disaster control across Latin America and the Caribbean.