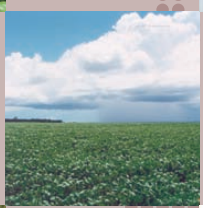
Scaling Up South-South and Triangular Cooperation

Japan International Cooperation Agency
November 2012









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JICA Research Institute

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ISBN: 978-4-86357-046-7

Preface

With the Busan High Level Forum behind us and with just two years ahead of us until the 2015 MDG target year, all around we see examples of South-South Cooperation (SSC) and Triangular Cooperation (TrC) attracting ever-mounting levels of global attention. Indeed, that increasing attention on SSC/TrC seems quite justified. The global landscape is rapidly changing with the appearance of numerous new and diverse actors on the one hand and the enormous challenges that we must collectively face in the decades to come on the other. Faced with these "tectonic" changes, obviously, we definitely need to devise new and better modes of international cooperation. And SSC/TrC must be one of our very promising assets upon which we can develop tomorrow's international cooperation.

This volume has been compiled by a study group on SSC/TrC formed at JICA Research Institute, comprising researchers at JICA-RI as well as JICA staff with experience and interest in SSC/TrC. The team embarked on a project expecting that it would be a fairly straightforward job, given our ample experience in and vast information on SSC and TrC. The work turned out, however, to be much more challenging than we first thought: we found that statistics on SSC/TrC are not collected in a very systematic manner, perhaps, in part, due to SSC/TrC's broad definition; we found that SSC/TrC projects tend to receive diverse valuations from different people, who, depending on where they are, view them from a different perspective; given the large number of stakeholders inevitably involved in an SSC/TrC project, it was sometimes difficult to have a unified view upon even a small project; efforts to evaluate their impacts are still underway. And importantly, given SSC/TrC's broad scope, we should have taken up a wider variety of cases including, for example, cases of financial arrangements and those involving the private sector, which remained untouched.

So, much remains to be done, but this has been a very useful exercise for us, and we would welcome any feedback from the readers; we are determined to continue our work to shed light to the various aspects of SSC and also invite any interested parties to join us in deepening our analytic inquiry into the possibilities of SSC/TrC.

In concluding, on behalf of the study team, I would like graciously acknowledge the support, information and comments that we received from many of our colleagues, both within and outside JICA. While we did our best to incorporate such information and comments, the individual authors are responsible for the views expressed therein as well as for any errors and omissions that may remain.

On behalf of the SSC / TrC Study Team,

Tokyo, November 2012
Hiroshi Kato
Senior Special Advisor
JICA

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PART I

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International Development Cooperation in the 21st Century and South-South/ Triangular Cooperation

Akihiko Tanaka

The Changing World System

During the period of more than 60 years since development cooperation as we know it emerged in the aftermath of WWII, the world system has gone through a significant change. Economically, the era of overwhelming U.S. dominance or American hegemony began wavering as early as in the 1970s, giving way to the trend of multi-polarization of economies with recoveries in Japan and Europe. With the end of the Cold War, which largely determined international politics after the Second World War, the world system entered the post-Cold War era. The wave of globalization accelerated from around that time. Today, with the first decade of the 21st century behind us, the world system seems to be in a state of change that can happen only once in several centuries.

Placed in an era of this tectonic change of the world system, international development cooperation, which hitherto has been characterized mainly as the flow of resources from advanced countries ("North") to developing countries ("South"), is also at a major crossroads. While developed countries such as European countries, the US and Japan are experiencing ever-increasing difficulties, emerging economies are strengthening their presence rapidly. Countries traditionally categorized as "developing countries" are no longer homogeneous. On the one hand, there are a fair number of developing countries likely to achieve many of their Millennium Development Goals (MDGs) while on the other hand, there remain groups of countries, some of which are called "fragile," which are lagging far behind. An increasing number of developing countries and particularly, rapidly emerging economies, are starting to act as cooperation providers, thereby expanding the possibilities of South-South cooperation. And, with more international assistance providers in the field, notions on international cooperation are taking on more diverse forms. Along with the world system, development cooperation, too, is at a crossroads.

It is difficult to characterize today's changes in the world system in simple terms. I once mentioned that we may be at the start of an era that I call "the New Middle Ages," since the world today resembles the Middle Ages in that sovereign states and other non-state actors (businesses, NGOs, IGOs, INGOs, terrorist groups) interact intricately amidst a trend of globalization and mutual economic dependence.[1] No matter whether this metaphor is appropriate or not, it has become ever more difficult today to view the current world system merely through the concept of the sovereign state systems. Moreover, the overwhelming economic dominance of the United States and Europe—countries that led the establishment of today's sovereign state system—is coming to an end. If, as numerous projections predict, the economic scales of countries move proportionally to their populations, this trend toward diversification is likely to continue.[2]

These major changes in the world system are not taking place uniformly across the globe. Some parts are achieving rapid economic growth, while others stagnate. Thus, the dichotomy of advanced and developing countries is no longer appropriate. In the same vein the concept of "developing countries" is becoming obsolete; evidently it is inappropriate to lump quite heterogeneous groups of countries together simply as "developing countries."

Changing World System Calls for New Development Cooperation

These major changes in the world system call for a fundamental review of the concept of development cooperation.[3] Whereas development cooperation has been defined chiefly as transfers of sophisticated hardware and software originating in advanced countries to underdeveloped countries, development cooperation in the 21st century may take a different shape. This is because the knowledge and technologies needed in the decades to come will be quite diverse and different from those that have been built up in today's developed countries. For example, at least partly, it was knowledge and technologies developed only recently in the 21st century that drove the

[1] *Akihiko Tanaka, The New Middle Ages* (Tokyo: Nihon Keizai Shimbun, 1996)

[2] Tanaka, op. cit., sought to somehow include the "fragile states" of today into the analyses, and thus divided the global system into three spheres: the Neo-Medieval, Modern, and Chaotic. The countries in the Chaotic sphere are now referred to as fragile states.

[3] Whereas the 2005 Paris Declaration of OECD-DAC uses the terms "aid" and "donors," the 2011 Busan Declaration uses the terms "development co-operation" and "providers." This appears to reflect the changes I identify to a certain extent.

recent rapid growth of emerging economies, rather than the knowledge accumulated during the 19th or 20th century by today's North. Countries with lower income will look to the experiences of such emerging countries rather than to developed countries of the 20th century. Further yet, the next group of emerging economies may even pursue a different growth path from today's emerging economies.

These countries, too, will face enormous challenges in their ways forward, irrespective of their current stage of development. And for many of these challenges, unfortunately, no easy answers have been found, even by today's developed countries. Take, for instance, medical and pension systems that will likely be an issue in many countries as their economies mature. Tomorrow's developed countries will not be able to cope with this challenge simply by importing systems from today's advanced countries, whose systems have proved to be faulty. Thus, in a world faced with multitudes of tasks with no ready-made solutions, development cooperation must take the form of mutual learning and joint solution discovery.

The same applies to the realm of peace and state-building. The fact that the concept of "fragile states" has gradually made its way into the development community is worthy of appreciation as a sign of deepening pragmatism in development cooperation. This concept has helped realize the need for various measures to secure human security as well as the importance of institutions—in particular, functioning states—to sustain peace and order. Such measures include those for poverty reduction and improvement of health, as well as institutions that enable such measures to be sustained over the long term. Also required in a post-conflict society are efforts to re-establish peace, particularly those leading to reconciliation. All in all, whatever measures they may require, post-conflict or fragile states need human resources to implement such measures and to run the institutions. They also need a social infrastructure to keep the state system functioning. In a nutshell, they need to rebuild the state as a comprehensive system. Here again, the experiences of today's advanced countries are of little help; today's post-conflict countries must search for their own state-building paths in today's environment where a wide variety of non-state actors interact. This process, too, will inevitably be one of mutual learning and joint discovery.

Tomorrow's Development Cooperation

Then, how should Official Development Assistance (ODA) or, more broadly, development cooperation in general, change in the times to come? In a nutshell, it must adapt to the fundamental changes in the world system, as outlined above. In other words, innovative modes of development cooperation must be looked for, so that emerging countries are assisted to grow into advanced nations while achieving harmonious growth without serious political or social tensions. Development cooperation in the 21st century must also help the next group of countries learn from the experiences of their forerunners and to become the next-generation "emerging" countries. It will also have to help those countries enduring difficult conditions today to overcome their fragility and establish a foundation for social and economic development. And, to achieve this end, tomorrow's development cooperation must be centered on mutual learning and joint solution discovery among various stakeholders, from every country, both from the north and the south.

Specifically, I consider the following three dimensions to be of utmost importance.

The first is development cooperation from the regional, cross-border perspective, i.e., cooperation that serves to boost the emerging economies' energy, thereby activating the economies of neighboring countries as well as that of other parts of the world. What I envisage in Asia, for example, is a development cooperation that aims to further promote the dynamism of nations such as Indonesia, Malaysia, Thailand and Vietnam, and along the way, to activate economies in the whole of Southeast Asia and Asia at large. Similar ideas seem also very promising for many parts of Africa, the Middle-East, and Latin America. This perspective of regional, cross-border perspective development may call for a different approach in cooperation. In infrastructure development, for example, emphasis should be placed more on resolving regional bottlenecks beyond national borders.

The second is to enhance development cooperation for mutual learning and joint solution discovery. The conventional wisdom has been that "experts," usually foreign experts, visit developing countries to provide their expertise. However, cooperation could perhaps be more effective when an expert from outside and local experts work together, exchange ideas, and discover innovative solutions. This process could be

particularly effective if both of the experts have had similar experiences of their own. The importance of this cannot be overemphasized given the nature of the tasks we are facing, as I mentioned earlier. Actually, this is what we at JICA have learned through our long experience: examples abound, such as the development of a new biological species (e.g., soybeans in Brazil), a new method of aquaculture (e.g., salmon culture in Chile), or a new technology to reduce the risks of volcanic and seismological disasters (e.g., landslide prevention technology in Indonesia). Such mutual learning and joint solution discovery must prove useful in tackling global or universal issues such as climate change and urbanization, and other important issues. Such a process of mutual learning and joint discovery could accelerate the growth of the world knowledge base, if it is appropriately facilitated by international development cooperation.

And the third is to strengthen cooperation between various stakeholders in development cooperation. As noted at the beginning, a major characteristic of today's world system is the emergence of various non-state actors, and they are endowed with rich resources and have important roles to play in the development cooperation of today and tomorrow. These actors include, obviously, non-governmental organizations (NGOs) and private businesses, but also various players such as universities, research institutions, hospitals, schools/teachers, unions, and community leaders as well as many others.

South-South Cooperation and Triangular Cooperation

In these contexts, South-South and triangular cooperation will have ever-increasingly important roles to play in the coming decades, given their obvious advantages with respect to the agendas outlined above: they are very suited to regional cooperation; they can offer perfect space for mutual learning and joint solution discovery; and they are effective in mobilizing resources of various professions, backgrounds and experiences from around the world, which otherwise would not be participating in development cooperation.

Japan prides itself in having been a strong proponent of South-South and triangular cooperation since the mid-1970s, and is happy to share its ample experience with its partners, which is the purpose of this booklet. I hope this booklet will be widely read, and be used as a reference that will foster further cooperation among us.

The contemporary world system demands changes in our way of thinking about development cooperation. Development cooperation must be *co*-operation in the true sense of the word: working together. Extending this idea will enable us to adapt to the modern world system, and South-South and triangular cooperation is one important and promising means to that end. We intend to make every effort and work together with our partners around the world to establish a new form of development cooperation.

Chapter 1
Shaping International Cooperation into the Future

Hiroshi Kato

1. A Changing World System and the Need for a New Paradigm for International Cooperation

The significance of South-South Cooperation (SSC) is becoming even greater as we live in the post Busan High Level Forum era. The outcome document of the conference highlighted, even more strongly than ever, the significance of SSC and called for concerted efforts of the international community toward its strengthening. On the other hand, as the 2015 target year of the MDG is approaching, we need to rethink the kind of global community we intend to create as we march towards the 2020s, 2030s and beyond.

These two profound challenges in the global development landscape compel us to reconsider our fundamental perception of SSC; SSC is not only growing in its importance but also is changing its meaning in this post Busan and pre-2015 era, where, as clearly stated in the Introduction, we no longer think of the world system as comprising a developed north and developing south.

2. The Purpose of This Volume

This volume has been compiled to contribute to the conference's threefold purpose: (1) to showcase sustainable and scalable solutions, (2) provide opportunities to learn and share development successes, and (3) to explore new avenues for collaboration.

Analytically, we would like to pursue two objectives in this volume. The first is to *explore the meaning and possibility of SSC/TrC as a means of mutual learning and joint solution discovery* in a rapidly changing world system, as clearly stated in the Introduction. The second is to *explore ways to scale up* such meaningful knowledge exchange. Scaling up development efforts and their impacts has been one of the central themes that the JICA

Research Institute has been pursuing.[1]

The chapters that follow are attempts toward that end using different cases and analytical frameworks. Specifically, the following two chapters will deal with thematic issues, i.e., global issues such as climate change and disaster prevention (Chapter 2), and agricultural and food security (Chapter 3). In doing so, these two chapters will also look at analytical issues such as knowledge creation, institutional arrangements, capacity development, and scalability. In contrast, the subsequent Chapter 4 will dwell more on analytic issues, i.e., knowledge, institution and capacity; drawing on several case studies, it will look for key factors that facilitate scaling up of SSC as a means of knowledge creation.

Following these chapters are narrative case analyses, each offering somewhat detailed descriptions of selected SSC/Triangular cooperation projects supported by JICA. Finally, some facts and figures of Japan's SSC/Triangular cooperation are appended.

3. Outline of the Volume

Chapter 2: Climate Change, Disaster Risk Management and South-South/Triangular Cooperation (Hosono, Akio)

This chapter attempts to explore the roles that SSC/TrC can play in dealing with disaster prevention. Addressing the risk of disasters is of particular urgency and critical importance in developing countries, which, with their financial, technical and social constraints, are more vulnerable to disasters than developed countries. SSC/TrC could play a particularly important role in this area; it can mobilize knowledge and wisdom of both foreign and local experts for the development of technically and socially appropriate technologies and systems for disaster prevention.

Starting with the reflection on the experience of the East Japan Great Earthquake and Tsunami as well as the flood that hit Thailand in 2011, the author presents three levels of capacity needed to deal with possible disasters. Then, the chapter will look at how an SSC/TrC project has worked in alleviating such gaps, taking cases from Central America. The descriptions vividly illustrate how the project succeeded in mobilizing

[1] JICA Research Institute has been conducting a joint research with the Brookings Institution on scaling up, the result of which is forthcoming as Chandy, Laurence, Akio Hosono, Homi Kharas and Johannes Linn, eds. (forthcoming).

local knowledge and people's wisdom, resulting, for example, in a highly ingenious way of flood prevention, using locally available materials. Other impressive and tangible achievements include a case where possible loss of life was avoided in the case of a powerful hurricane event. SSC's regional coordinating functions are also highlighted.

Chapter 3: South-South/Triangular Cooperation and Capacity Development (Hosono, Akio)

This chapter looks at a case that deals with agricultural development in the tropical region, i.e., in Latin America and Africa. The case is called the ProSAVANA project, a triangular cooperation project between Mozambique, Brazil, and Japan. It aims at the development of a huge savanna area stretching on the Mozambican soil. This project intends to capitalize on the body of knowledge accumulated in Brazil through the Cerrado development. The Cerrado development is an achievement, sometimes called "historic," made possible by Brazil-Japan cooperation, in that it created a new body of knowledge on tropical agriculture on the savanna, which was available nowhere else until then. The chapter, therefore, goes on to look deeper into the process of knowledge creation – both technological and institutional – and this kind of interaction is what the ProSAVANA project intends to realize in Mozambique.

The chapter also looks at some institutional arrangements that have facilitated various cooperative activities of Japan with a number of countries. The examples of partner countries presented in the chapter include Mexico, El Salvador, and Chile.

Chapter 4: Scaling Up of South-South Cooperation (Kato, Hiroshi)

This chapter starts with the affirmation of the message contained in the Introduction of the book: the challenges that the global community faces in the 21st century call for a new architecture of development cooperation, and tomorrow's international cooperation will increasingly have to be a process of horizontal "mutual learning" and "joint solution discovery." It then argues that while SSC as we know it today is already leading us in that direction, the remaining challenge is how to scale up SSC in such a way that it will evolve into the system that we aspire to have in the future. Viewing SSC essentially as a process of knowledge creation, and paying particular attention to institutional arrangements and capacity development aspects, this chapter attempts to draw

practical lessons for effective scaling up of SSC from Japan's experiences.

The argument goes that SSCs can be particularly effective when they deal with the right kind of knowledge that is unavailable elsewhere and when it is strongly needed by the beneficiaries. It then argues the importance of having a knowledge base and continuous support, for both of which, it is argued that having "centers of excellence" (COEs) could be instrumental. The importance of encouraging interactive knowledge creation process is highlighted, for which there are a variety of possible approaches. Finally, using the Indonesian case as an example, the chapter looks into the process of capacity development of today's southern countries. It ends with a call for consistent and continuous support from the international community, since the process will inevitably be a time-consuming exercise.

Part II: Cases

This volume contains nine case reports concerning projects and programs as well as processes and mechanisms of capacity development and/or institution development for SSC/TrC.

The first three cases deal with the projects going on in Africa in education, health, and investment. Case 1 and 2 feature projects with extensive networks, involving 34 and 15 countries, respectively. The third case is a Zambia-Malaysia-Japan triangular cooperation on investment promotion.

Case 4 looks at the process of Indonesia's steady efforts in recent years toward becoming a very robust SSC/TrC performer.

Latin American countries have been very active in SSC/TrC cooperation and JICA, like many other players, has had a lot of SSC/TrC activities on that continent. Here we have included 5 reports related to this area. Cases 5, 6 and 7 are on individual projects: Case 5 looks at a triangular cooperation involving El Salvador and Mexico, a case also briefly referred to in Chapter 2. Case 6 is about a project for Haiti. Case 7 is a South-American sub-regional project on animal health. The remaining two cases deal with Brazil: Case 8 on the country's capacity development for tropical rain forest preservation, and Case 9 provides a concise description of a cooperation framework called Japan-Brazil Partnership Program.

1. Network-type Cooperation: Strengthening of Mathematics and Science Education in Western, Eastern, Central, and Southern Africa (SMASE-WECSA) Network
2. Inspired by Sri-Lankan Practice: Scaling-up 5S-KAIZEN-TQM for Improving African Hospital Service
3. The Triangle of Hope: Promoting Investment in Zambia through Malaysian Experiences
4. Flexible Cooperation for Indonesia's Multi-dimensional Challenges for South-South Cooperation under a Shared Vision
5. The *Taishin* Triangular Initiative in Central America: Co-creating Quake-resistant Construction Methods for Popular Low-cost Housing
6. Sharing Sustainable Agricultural Methods between "the Sister Countries of Española Island" in the Caribbean
7. Tackling Regional Challenge of Livestock Hygiene in South America through the Development of Professional Network
8. Japan-Brazil Partnership Program: A New Framework for Triangular Cooperation
9. Towards Sustainable Rainforest Conservation in the World: International Course on Rainforest Monitoring"

Reference

Chandy, Laurence, Akio Hosono, Homi Kharas and Johannes Linn, eds. (forthcoming). *Getting to Scale: How to transform the lives of millions of the world's poorest people.* The Brookings Institution Press.

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Chapter 2
Climate Change, Disaster Risk Management and South-South/Triangular Cooperation

Akio Hosono

1. Introduction

The potential of South-South cooperation (SSC)/Triangular cooperation (TrC) in sharing knowledge and mutual learning is high. Not only has the South accumulated valuable experience in identifying and implementing development solutions, overcoming difficulties and constraints, the South and the North can collaborate to effectively manage the process of knowledge creation, knowledge exchange, capacity development and institution building to implement development solutions at scale. In particular, there are experiences that relate to managing new challenges of climate change adaptation and mitigation as well as prevention of natural disasters, and areas where the South and North are learning together to arrive at appropriate solutions.

Climate change adaptation and more effective prevention of natural disasters are new challenges for both the North and the South. However, the challenge for the South could be much greater, because the South has different constraints which are not necessarily found in the North such as availability of financial resources, appropriate technology and technical know-how, specialized professionals and trained personnel for disaster risk management (DRM), etc. For example, seismo-resilient transport infrastructure and houses are expensive. In developing countries, innovative solutions are needed to provide low-cost houses made of locally-available construction materials, which are affordable for low-income families. Similarly, these countries have to find ways and means to construct an infrastructure which is resilient to floods, landslides, earthquakes, tsunamis and other disasters, but at the same time affordable, with attention to the budget constraints of these countries' local and central governments.

From this point of view, SSC among developing countries prone to natural disasters could be an effective vehicle for mutual learning and

co-creation of innovative solutions. Countries of the North could also cooperate with the South through triangular cooperation providing their own experiences of climate change adaptation and natural disaster prevention taking into account developing countries' local context.

This Chapter discusses the possibility of SSC/TrC in the area of climate change adaptation and disaster risk management (DRM). First, lessons from the Great East Japan Earthquakes and Tsunami and Thai flood that occurred in 2011 with be discussed (Section 1). Then, from the perspective of these lessons, the case of DRM in one of the most natural-disaster prone regions of the world, Central America, will be discussed (Section 2). The experiences of SSC/TrC based on the regional cooperation model of this region will then be analyzed (Section 3). New initiatives for more comprehensive climate change adaptation and disaster prevention will be discussed (Section 4). Finally, some conclusions will be presented.

2. Lessons from the Great East Japan Earthquakes and Tsunami and the Thai Flood[1]

The Japanese government considers it important that "Japan shares with the world lessons that have been learned based on the experience and knowledge gained from the Great East Japan Earthquake." [2] The recommendation of the Reconstruction Design Council in Response to the Great East Japan Earthquake issued in June 2011 entitled "Towards Reconstruction: Hope Beyond the Disaster," establish four pillars for recovery, one of which is "open reconstruction," referring to the belief that "our nation must strengthen its bond with the international community, and aim for reconstruction that is open to the world, rather than inward-looking." In that context, "it is necessary to share lessons Japan has learned from this experience with other countries, making them international public property. Japan has a duty to proactively contribute to the international community in the areas of disaster prevention and reduction in this manner in the future. Japan should utilize the lessons learned during the recovery and reconstruction process, and proactively promote international cooperation that values the bonds between people, through activities such as the development of

[1] This section draws partly on the presentation made by Mr. Shinya Ejima, the Global Environment Department of JICA, in the occasion of Inter-American Development Bank (IDB) Meeting in March 2012. Errors and omissions are those of the author.

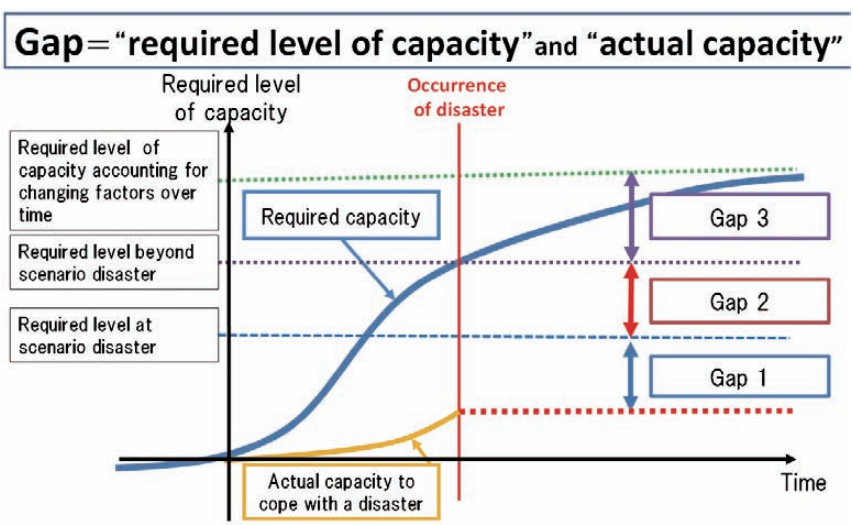
[2] Ministry of Foreign Affairs (Japan) (2011), p.16

human resources in developing countries in Asia and other regions."[3]

One of the most important lessons learned from the Great East Japan Earthquakes and Tsunami and the Thai flood was the realization of the big gap between the required capacity of the country, society and people to cope with the disaster and actual capacity. The magnitude of this gap determined the damage caused by disasters.

What factors caused the gap? Based on case studies, we assume that there exist three kinds of required capacities to be considered depending on the severity of the disasters we face. The first one is the capacity for a scenario disaster. A "scenario disaster" refers to a disaster which is of a predicted magnitude and for which prevention measures had been taken in advance. However the capacity that a society actually has can

Figure 1: Three Types of Gaps between Required Capacity and Actual Capacity



Source: Based on Ejima, Shinya (2012)

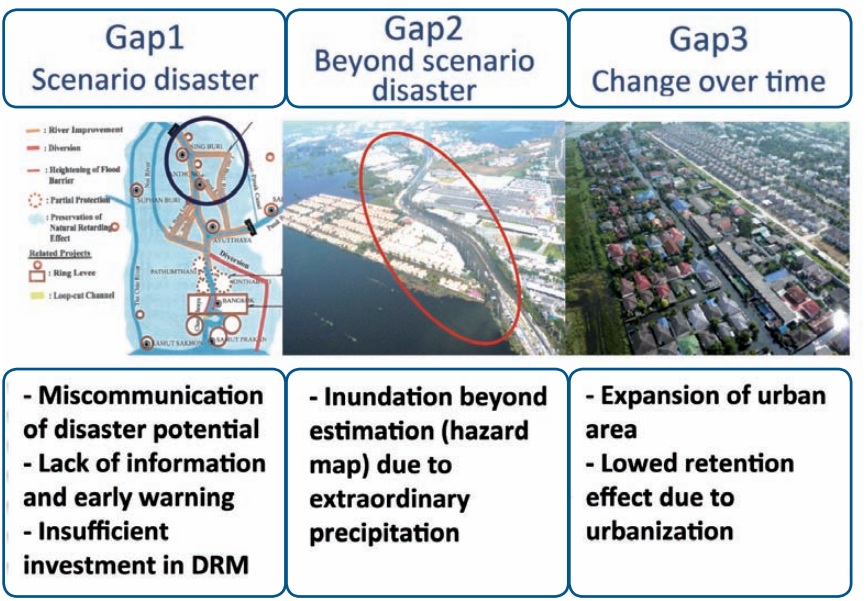
sometimes be smaller than what is required to cope with this kind of predicted "scenario disasters." This gap is called Type 1 Gap. The second one, called Type 2 Gap, is the gap between the actual capacity a society has and the required capacity to cope with a disaster whose magnitude

[3] Ibid. p.16

happens to exceed the foreseen "scenario disasters." The last Type 3 Gap is the gap between the actual capacity a society has and the capacity level that has to be enhanced over time, to deal with the long-term changes that happen due to factors such as climate change, urbanization, population growth, etc.

These three gaps could be illustrated with the case of The Thai flood of 2011. As for the first gap, in spite of the scenario flood announced by the Thai government, some industrial estates are located in high-risk areas because owners and/or builders didn't understand the degree of damage possible and did not invest enough in disaster risk management for the potential severity of a flood. This was the Type 1 Gap.

Figure 2: Three Types of Gaps in the Case of Thai Flood in 2011



Note: Economic losses due to the flood in Thailand in 2011 are estimated to be 12.5 percent of the country's GDP.
Source: Ejima, Shinya (2012)

In terms of the Type 2 Gap, the flood happening in 2011 was much bigger than the prepared flood scenario. That is why some industrial estates which were outside the inundation area foreseen by a hazard map based on the scenario were affected by the flood. Here, we observe the gap between an extraordinary disaster scale and a scenario scale.

The Type 3 Gap is the gap developed over time. JICA supported Thailand to prepare a Master Plan for disaster risk management in the late 90's. However, Bangkok has very rapidly developed and urbanized during recent years. Therefore, it is necessary to take into account those changing factors in order to up-date the Master Plan. The Type 3 Gap is realized when changes over time are taken into account.

Based on the analysis of cases in which the three types of gaps occurred, the following measures taken appeared to be most appropriate to cope with each of them. Against the Type 1 Gap, which is the difference between recognition and reality, strengthening "Risk Literacy" should be effective. In many cases, people make judgments on their own and do not make efforts to evacuate. It is important to establish adequate communication at various levels in order to minimize the gaps between recognition and understanding risks. For instance, it is necessary to understand the limitation of structural and non-structural measures. In the Great East Japan Earthquake, there were cases where even municipalities that had issued a declaration (certificate) of safety suffered damage themselves. While one of the important roles of the public administration is to make residents feel safe, it is also important to make them aware of the limitations so that they can properly anticipate the risk of disaster. Communication is essential to ensure this awareness.

There are cases seen frequently around the world where the sense of crisis suddenly disappears, especially after the construction of a large-sized structure. However, there is a limitation to any kind of measure. It is essential to improve the disaster-reaction capacity by spreading this kind of information throughout the community.

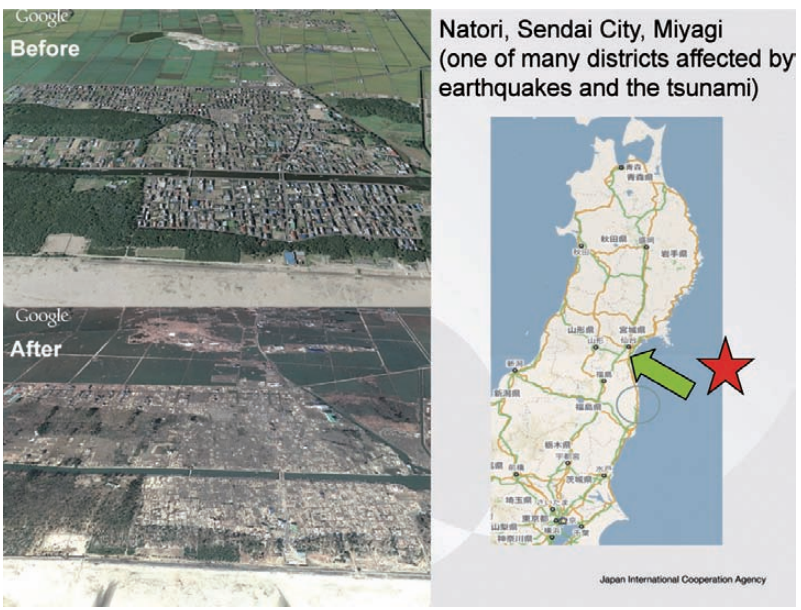
The Type 2 Gap is caused because anticipating risk always involves uncertainty. This shows the importance of "Redundancy," such as building a multi-layered or combined capability for reacting to disasters. In various regions throughout the world, including Japan, people may feel a sense of excessive safety, with the introduction of a system based on leading-edge technology. However, we must also be aware of the limitations of such systems. When the Great East Japan Earthquake occurred, there were cases where information could not be transmitted because of a blackout. We must not forget that there are many kinds of potential risks, and sometimes redundant preventive measures may become necessary. In addition, it is also effective to establish multi-

purpose measures by adding the aspect of disaster prevention to projects in different areas that are not originally aimed at disaster prevention.

We should not forget about redundant measures and operations for the future disaster risk management due to Type 2 Gap. Year 2011 had some extraordinary disaster events such as East Japan Earthquakes and Tsunami and Thai flood. In learning from these experiences, we should be better prepared with as many alternatives as possible by designing and operating preventative measures. To do so, we had better consider the importance of multi-functional and multi-sector disaster risk management. We can call this approach "Redundancy."

Victims of the Great East Japan Earthquake and Tsunami totaled 14,508 persons killed, 11,452 persons missing and 130,145 evacuees. It occurred at 14:46 on March 11, 2011. The magnitude of the earthquake was 9.0. It is estimated that the economic loss caused by the earthquake and tsunami was about 4% of Japanese GDP.

Figure 3: Natori, Sendai City, before and after the Tsunami of March 11, 2011



Source: Ejima, Shinya (2012)

Lastly, regarding the Type 3 Gap, we need to recognize that even if we finish measures based upon an expected situation, such measures don't provide a permanent solution. Circumstances change daily. For example, the international community has been discussing climate change and its impact lately. So we need to continue reviewing various counter-measures, taking into account changing factors such as climate change, urbanization and social factors. In order to address this type of gap, an effective measure could include efforts toward continuous improvement or "*Kaizen*".

Various kinds of disaster prevention measures have been taken in many countries, and promoted under the Hyogo Framework for Action (HFA). However, disasters such as the Great East Japan Earthquake and the Thai flood are revealing the fact that various countermeasures may not necessarily work as expected, and may not result in reducing risks.

In order to fill the various gaps explained so far, and to implement better Disaster Risk Management, we believe that it has become important to have the guidelines based on lessons learned from the recent great disasters in Japan and Thailand combining the three perspectives, namely "Risk Literacy," "Redundancy" and "*kaizen*," keeping in mind the comprehensive disaster risk management strategy.

3. South-South and Triangular Cooperation for Disaster Risk Management in Central America

Central America is a disaster prone region, and the countries of the region have been making concerted efforts to reduce disaster risks through a regional cooperation mechanism of the Center of Coordination for the Prevention of Natural Disasters in Central America (CEPREDENAC). One of the projects based on the above-mentioned approaches discussed in the Section 1 is the Project on Capacity Development for Disaster Risk Management in Central America, or the "BOSAI Project." In this project, JICA supports capacity development to promote community-based disaster risk management in six countries in Central America with the framework of region-wide cooperation under the CEPREDENAC, which is one of the specialized regional cooperation mechanisms under the auspices of Integration System of Central America (SICA).

The overall framework for this region-wide cooperation initiative was established by the Tokyo Declaration of Japan-SICA Summit in 2005. It

included a region-wide cooperative effort for the fight against Chagas disease, better mathematics education, natural-disaster prevention, improved re-productive health, quality and productivity improvements, and other initiatives. Governments of Costa Rica, Honduras, Guatemala, El Salvador and Panama submitted official requests to Japan for technical cooperation with regard to local disaster risk management in 2006. Based on this initiative, management authorities of the above five countries, CEPREDENAC and JICA launched "BOSAI Project" in 2007. Nicaragua joined the Project in 2008.

Figure 4: Location of Communities of BOSAI Project

Source: Arakida, Masaru (2009)

The heads of states of member countries of the Central America Integration System (SICA) adopted, on October 30, 2010, the Central American Policy of Integrated Disaster Risk Management (PCGIR), in order to respond to the need to update the regional commitments designed to reduce and prevent the disaster risk and thereby contribute to an integrated vision of development and security in Central America. The PCGIR highlights the importance of developing local capacity to reduce risk and to respond to disasters by strengthening the autonomy and resilience of communities. BOSAI has constituted an important

pillar in the implementation of the PCGIR.

The regional progress report of the Hyogo Framework of Action (HFA) on Central America, updated April 2011, referenced two indicators for HFA priorities in relation to the local disaster risk management: "Sub/regional early warning systems exist" and "Sub/regional information and knowledge sharing mechanism is available." One of the aspects which should be highlighted among the achievements of BOSAI is its contribution to the progress towards achieving these regional indicators of HFA.[4]

As for Risk Literacy, BOSAI focuses on helping the residents fully understand the risks of their own community and take actions on their own by maintaining reliable communication between the communities, municipalities and national agencies, and at the same time by letting the communities implement risk mapping through repeated discussions and site inspections.

Figure 5: Project on Capacity Development for Disaster Risk Management in Central America (BOSAI Project)

Source: Ejima, Shinya (2012)

[4] Bosai Terminal Evaluation Team (2012) p.9

From the perspective of redundancy, the project also approaches other sectors through activities to promote the awareness on disaster prevention by means of school education, and by incorporating collaboration with the development committees of the community.

From the perspective of *kaizen*, capacity development aims to let the community prepare risk maps and disaster management plans, and improve them on its own. Capacity development, both at community and local government levels, strengthened their ability to effectively respond to various disasters including earthquakes, flooding and landslides and to take concrete action such as the development of hazard maps, early warning systems, disaster prevention plans, and innovative practices to prevent landslides, flooding, etc.

4. Mutual Learning and Co-creation of Innovative Solutions in the Capacity Development Process for the Prevention of Natural Disasters

Since commencing in 2007, the BOSAI Project was implemented according to its Master Plan and Annual Plans of Operation (APOs). While the Master Plan is common to all participating countries, APOs are prepared by each participating country in accordance with the master plan. The Project Design Matrix, which is the framework for project implementation and evaluation tool, was also prepared based on the master plan. There are three indicators set in the Project Design Matrix to be used to evaluate the level of attainment at the project purpose level: (1) The first indicator is the reduction of vulnerability to disasters in target communities; (2) The second indicator is the strengthening of disaster risk management in the target municipalities; (3) The third indicator is the improvement of knowledge and ownership regarding local disaster risk management of CEPREDENAC member national institutions. According to the Terminal Evaluation Report of BOSAI, the targets of the first and second indicators were achieved 68% and 90% respectively. As regards the third indicator, the target was achieved fully in 3 national institutions and significant advances were attained in 3 other institutions.[5]

The first target is related directly to the communities' capacity development (CD). Major achievements at the community level include

[5] Ibid. pp.10-11

the development of organizations, risk maps, evacuation routes, early warning systems and emergency response plans. Some communities in Panama, Costa Rica, Honduras and El Salvador constructed small mitigation works such as used-tire dykes and retaining walls as well as attaining remarkable involvement and commitment in voluntary labor. Although there have been many important cases of successful capacity development in which effective mutual learning and co-creation of innovative solutions have taken place, one of the most outstanding cases could be that of used-tire dykes. We will therefore focus on this case.

In a rural community called Barrio Hotel near the city of Cañas, Costa Rica, community members developed a hazard map related to the flood of the Cañas River and, based on the map, established an early warning system (SAT) consisting of rain gauges and warning sirens, before starting the pilot project of a used-tire dyke.

Figure 6: Target Area of Community Flood Warning in Costa Rica

Source: Oi, Hidetomi (2006)

After exchanging ideas among community members and JICA, represented by Mr. Horigome, a civil engineering specialist, they started

to explore the possibility of utilizing used tires from a sugar cane plantation nearby for the construction of dyke to reduce the risk of flood of the Cañas River. Many of the community members were workers on this plantation and were aware that the company had difficulties in disposing of used tires. They thought these tires could be used for construction of dykes, but lacked the technical know-how. JICA specialists provided information regarding successful experiences in a country where used tires were utilized to strengthen river bank protection. Community members, the CNE (Comisión Nacional de Prevención de Riesgos y Atención de Emergencias) project manager and Mr. Horigome made a careful study on where dykes should be constructed.

We can recognize clearly that through this process of capacity development, effective mutual learning and the co-creation of innovative solutions among stakeholders was achieved. As the construction of new dykes with used tires is practically the first experience in history, a very careful approach was adopted. It was decided to first carry out a pilot project in order to establish the proper methods of design and

Figure 7: Construction of Used-tire Dyke in Costa Rica

Source: Kawahigashi, Eiji (2011)

construction. Community members were to participate in the construction work in shifts. These decisions were made by community members. They also negotiated with the sugar cane plantation company to provide used tires. The City of Cañas and the BOSAI project provided other construction materials. The construction of the pilot dyke was 23 meters in length, 2.1 meters in width and 90 centimeters high. It was started on April 27 and finished June 12, 2009.

Based on the experience of the pilot dyke, a plan to expand it was proposed by Professor Yamamoto of Hiroshima University sent by JICA as a disaster prevention specialist in January 2010. A dyke of 116 meters, which constitutes the first part of the plan, was constructed by community members with the collaboration of CNE and the City of Cañas in February and March 2011. A technical check of this new dyke was made by Professor Yamamoto.

Similar projects were implemented in other parts of Central America.

Figure 8: Construction of a Used-tire Retaining Wall to Avoid Land Slides in Honduras

Source: Kawahigashi, Eiji (2011)

In the BOSAI Project, there have been several other cases of the co-creation of innovative low-cost solutions to reduce the vulnerability to disasters in the target communities and to strengthen their disaster preparedness. Installation of rainfall equipment (rain gauge, fluviometer) with the alarm unit for community-operated flood warning and water glass (water level monitor) with automatic warning systems are some of examples.

Figure 9: Water Glass (Water Level Monitor) with Automatic Warning System in Guatemala

Source: Oi, Hidetomi (2008)

5. Achievements at the National Level and Regional Scaling-Up through South-South and Triangular Cooperation with Regional Support

According to the evaluation related to the strengthening of the mechanisms for disaster risk management, based on interviews conducted in 50 communities out of the target 62 communities of the BOSAI project, 96% established a disaster risk management organization, 88% prepared a risk map, 66% set-up the communication

systems, and 88% developed a disaster response plan. Regarding the promotion of knowledge or awareness on disaster risk management in target communities, 66% held workshops or events in communities and 60% conducted evacuation drills.

Based on the experiences of the targeted communities, national scale-up processes have taken place in each country. The installation of rain gauges for early flood warning extended beyond the targeted communities in El Salvador. A plan to set up warning sirens in more than 150 communities is in force in Tegucigalpa, Honduras. The Frog Caravan is one of the successful activities of the BOSAI Project in that the practice extends well beyond the target communities[6]. The Frog Caravan was also conducted by

Figure 10: An Early Warning Siren in the Las Hojas Community, El Salvador

(Above)
House destroyed by Hurricane lda in Las Ojas community in November 2009

(Below)
One of the nine flood early warning sirens in the Las Hojas community

Source: JICA El Salvador Office

[6] Frog Caravan (Caravana de Rana) is an innovative training system to learn about natural disaster prevention developed by a Japanese NPO, Plus Arts (+Arts), in 2005. In Japan the frog is considered a friendly symbol promoting good feelings and Frog Caravans tour schools, involving local officials, teachers and schoolchildren, and introduce for example games for teaching children how to extinguish fires or rescue people trapped under rubble in the wake of an earthquake.

other donors, and in Guatemala it is now planned to incorporate the Caravan into a school curriculum. A plan to extend the Frog Caravan nationwide has been implemented in Guatemala and Panama.

The impact of the BOSAI project has been recognized in some natural disaster events. When Hurricane Ida slammed into El Salvador in November 2009, it triggered massive flooding and landslides and more than 300 persons were killed or went missing. However, in the coastal village of Las Hojas there were no deaths and an investigation attributed this at least partly to the fact that a disaster early warning system had been installed there by JICA. In the very early morning of November 8, the disaster committee of San Pedro Mashuat received the information of extraordinary rainfall with water levels beginning to rise dangerously from the upstream communities of Jiboa River.
This information was transmitted to the village disaster prevention

Figure 11: Las Hojas Community after the Hurricane Ida

Note: Red circle indicates one of the early warning sirens
Source: JICA El Salvador Office

committee of Las Hojas via a JICA donated wireless system. Nine alarm sirens were sounded throughout the village two hours before the flood allowing local residents to quickly flee before floodwater could engulf them. The establishment of disaster prevention committees and the installation of wireless transmission systems and nine alarm sirens were part of the BOSAI project. The survey conducted in 2010 discovered that 50

percent of 94 families of the community evacuated when they heard the siren and that 37 percent knew about the BOSAI Project.

During tropical depression 12E in October 2011, there were no casualties in the BOSAI Project target areas in El Salvador. When a survey was made in December 2011 in San Pedro Mashuat, where significant damage occurred during storm 12E, inhabitants expressed their gratitude for the BOSAI Project that there were no casualties thanks to early evacuation practice.[7]

One of the pioneer municipalities of the BOSAI Project in El Salvador, Santa Tecla, participated in February 2011 as the sole local government representative community of Central America in the Thematic Debate of the United Nations General Assembly on Disaster Risk Reduction which aimed to strengthen the understanding of how to reduce risk and exposure to disasters through effective investment policies and practices and sustainable urban management. Santa Tecla received recognition as the "Role Model for Participatory and Sustained Risk Reduction Policy" of the "Making Cities Resilient Campaign" in the Third Session of the Global Platform for Disaster Risk Reduction, organized by the United Nations in Geneva in May 2011.

According to the Mayor of Santa Tecla, Oscar Ortiz, strong awareness and motivation of this municipality on disaster prevention is due to the tragic consequences of a landslide caused by the big earthquakes in 2001. The landslide took the life of 700 inhabitants. It was difficult to reconstruct communities seriously affected by the earthquakes. The municipality put the highest priority on disaster risk management since this tragedy occurred. He considers the keys to the successful process, recognized by the United Nations, was the trust of the inhabitants through a participatory approach, education and local government leadership with medium and long term vision. Santa Tecla's experiences and know-how are shared with other Central American countries. The rain gauges (fluviometer) introduced by Yayoi Yoshioka, a volunteer of JOCV for the first time in the municipality are still in use for early warning of floods. The BOSAI Project has been effective and the municipality learned a lot from the Hyogo Phoenix Plan.[8]

[7] Terminal Evaluation Team (2012), p.13

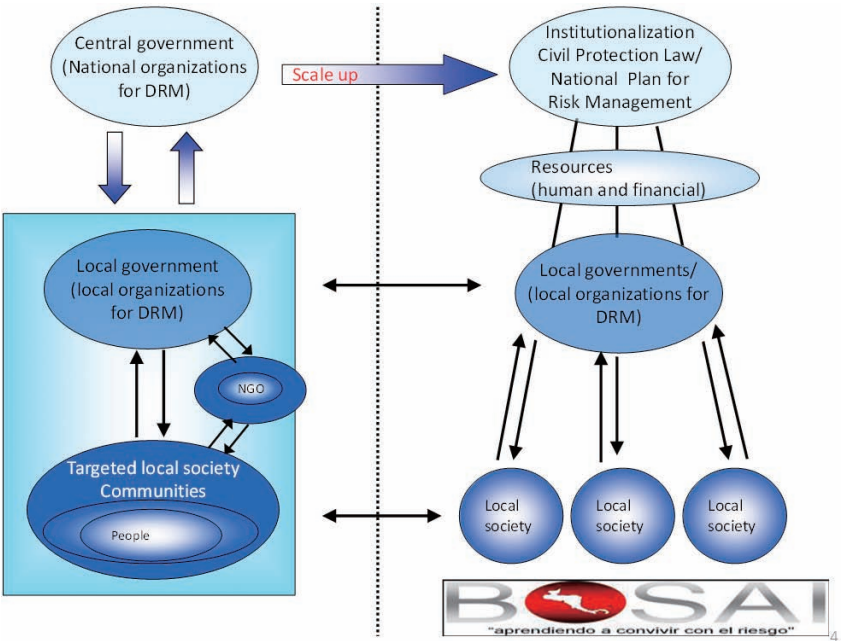
[8] This part of the experiences of Santa Tecla is based on the author's interview with its Mayor, Mr. Oscar Ortiz on August 28, 2012.

Figure 12: Landslide at Las Colinas, Santa Tecla, El Salvador in 2001

Source: Oi, Hidetomi (2008)

Several national scale-up initiatives of the BOSAI Project have been carried out. In El Salvador, the Civil Protection Authority has assigned 178 municipal delegates ("Delegado en Municipio") and 19 department delegates ("Delegado en Departamentos") in accordance with the Law of Civil Protection, Prevention and Mitigation of Disasters enacted in 2005. These delegates facilitated the establishment of the Municipal Commission of Civil Protection (CMPC). The National System of Civil Protection (SINAPROC) in Panama has increased the number of staff at a provincial level with the assignment of a national agent ("Punto Focal Nacional") and provincial agent ("Punto Focal Provincial), who are engaged in the coordination with municipalities/communities to promote the integrated local disaster risk management. The Permanent Commission of Contingencies (COPECO) of Honduras through its seven regional offices is promoting the establishment of Emergency Committees at different levels (departments, municipalities, communities, schools and working centers). As of the end of 2011, 150 out of 298 municipalities have established Municipal Emergency Committees (CODEM). Also 325 Local Emergency Committees at community levels have been organized. The BOSAI Project has been contributing to the institutional strengthening of these organizations through activities specifically targeting municipalities and communities.

Figure 13: CD Pathways for Innovative Practices to Scaling Up in the Case of BOSAI Project (examples)



Source: Prepared by the author

National legal and/or regulatory frameworks have been established or will be in force soon. The Civil Protection Law for Prevention and Mitigation of Disasters in El Salvador, the National Policy for Integrated Risk Management in Panama, the National Plan for Risk Management in Costa Rica and the National Policy for Disaster Risk Reduction in Guatemala are already in force. The National Policy for Integrated Risk Management in El Salvador and the National Plan for Risk Reduction as well as the National Policy and Strategy for Integrated Risk Management in Nicaragua, the Law of National Systems for Risk Management and the National Plan for Integrated Risk Management in Honduras are in the approval process. These legal frameworks are appropriate and instrumental in promoting the scale-up of local risk management to a nation-wide level.

From the South-South/Trangular cooperation perspective, exchange of experiences, knowledge and know-how related to disaster risk management is actively promoted through CEPREDENAC. The

capacity of CEPREDENAC itself has been strengthened during the BOSAI Project. In the BOSAI Project, methodologies and tools commonly applicable in Central America were developed based on the different experiences of member countries, producing a series of practical materials including a manual of hazard-map based trainings, manuals of production and use of a rain gauge, and of water glass, construction guides for used-tire dykes, and of soil cement dykes, prevention kits for disasters caused by volcanic eruptions, Frog Caravan manuals, DIG (disaster imagination game[9]), SAT (Sistema de Alerta Temprana, early warning system) guidebooks and so on, which are now publicly available in member countries.

Regional workshops have been held using developed methodologies and tools. Through regional meetings and in day-to-day communications among national member institutions of BOSAI, there have been effective exchanges of experiences, technology and know-how, which constitute the South-South cooperation of knowledge sharing and mutual learning. This process developed in the regional platform, CEPREDENAC, with cooperation of JICA could be considered as a case of region-wide South-South/Triangular cooperation.

CEPREDENAC received in the Third Session of the Global Platform for Disaster Risk Reduction in May 2011, the UN Sasakawa Award for Disaster Reduction for its contribution to regional efforts for formulating disaster prevention strategies and national plans based on Central America Policy of Integrated Disaster Risk Management (PCGIR). It was prepared by CEPREDENAC and approved by heads of states of Integration System of Central America (SICA).

One interesting achievement of South-South/Triangular cooperation in the framework of BOSAI is that it constructed a community shelter house in collaboration with another SSC project in Central America, the TAISHIN project. The TAISHIN Project aimed at strengthening earthquake-resistant housing in El Salvador from 2003 through 2012.[10] The shelter house was constructed in the Metapalos Arriba community in Triunfo municipality, Cholteca, Honduras. The house was based on the structural engineering research using a large-scale structure testing laboratory to study the seismic

[9] DIG (known in BOSAI Project as "El taller de Metodologia Komura) is the methodology developed by Professor Takashi Komura, of the Fuji Tokoha University, Japan.

[10] For details of TAISHIN, see the case study on this Project included in this volume.

behavior of structures made of frame and sun-dried brick or adobe (a locally available low-cost material). These are the most common building types found in Mexico, Central America, and the Caribbean.

BOSAI Project in the Metapalos Arriba community started June 2008. The construction of the community shelter house was the plan proposed through the mutual learning process similar to that of the community near the City of Cañas, Costa Rica explained in the Section 2. Community members, JICA professionals including Mr. Horigome and Mr. Kinoshita as well as other stakeholders had several meetings. Through this process, it was decided to construct the earthquake resistant low-cost house ("casa de sismoresistente con abobe reforzado) with the use of the technology developed by the TAISHIN Project in El Salvador.

The municipality provided a fund to buy the land. More than 6000 adobes were made by inhabitants themselves using the most inexpensive locally available material. This construction project was important for community members, because it gave them the opportunity to enhance their awareness of and capacity for disaster risk management and to learn about the construction methods for building seismo-resistant houses. The synergy effect of the BOSAI and TAISHIN projects was attained through SSC/TrC in this community shelter housing construction project.

Figure 14: Centro Albergue (a Community Shelter House) in the Metapalos Arriba Community in Cholteca, Honduras.

Source: JICA El Salvador Office

6. A More Comprehensive Approach to Disaster Risk Management in Developing Countries.

In order to formulate a comprehensive approach to disaster risk management in developing countries, the following three aspects appear to be crucial, bearing in mind experiences of recent natural disasters and of international cooperation in developing countries. First of all, the importance of both risk prevention and reduction as is mentioned in the "The recommendation of the Reconstruction Design Council in Response to the Great East Japan Earthquake" cited in the Section 1 of this Chapter must be considered. Secondly, it is necessary to take into account changes of risk over time taking into account the effects of climate change, urbanization and so on. These changes could produce the Type 3 Gap as discussed in the Section 2. Thirdly, in the case of developing countries, affordability by governments, communities and inhabitants should be fully taken into account.

Generally speaking, the main aspects of a standard framework of risk management are risk avoidance (or prevention, Bosai), risk reduction (Gensai) and risk transfer (insurance). In the risk avoidance (or prevention) area, in addition to a strengthened capacity for disaster risk management, quality standards of public works, seismic building codes and land use regulations are important. In the risk reduction (Gensai) area, pre-disaster investment and seismic reinforcement construction are essential.

In an effort to support risk reduction efforts of El Salvador, a new cooperation project called GENSAI started recently. The tropical cyclone 12E seriously affected El Salvador, due to historically high continuous rainfall and caused severe damage to social and economic infrastructure in the country. Not only did 12 bridges collapse, 37 bridges were damaged seriously, landslides and road slope failures were observed at many sections along roads including major highways. Disasters caused by rain in El Salvador have become more frequent and serious recently. Hurricanes Mitch, Stan, Ida and tropical cyclone 12E brought heavier continuous rainfall.

In these circumstances, the Department of Climate Change Adaptation and Strategic Risk Management (DACGER) was newly organized under the Ministry of Public Works, Transport, Housing and Urban Development (MOP) of El Salvador under the Minister's direct control

in 2008. With this initiative, the government of El Salvador made the promptest response to climate change in Central American countries. With these provisions, government efforts proved highly capable during the restoration works for 12E. Heavy equipment consisting of 142 heavy machines for reconstruction granted by the Japanese government in 2010 was effectively utilized during the restoration work. With this experience and in response to the request from the MOP, the Japanese government decided to carry outthe Economic Infrastructure Rehabilitation Project in 2012. And, almost at the same time, in order to strengthen the capacity of disaster reduction regarding pre-disaster investments and seismic reinforcement construction, the GENSAI Project has started with the cooperation of JICA.

The aims of the GENSAI Project to be implemented between 2012-14 in El Salvador are: (1) to establish a structure in the MOP which promotes the implementation projects of improvement of public infrastructure in accordance with the priority recommended by DACGER; (2) to establish a system which rapidly and adequately prepares an inventory of damages and implements reconstruction work when natural disasters occur; and (3) to establish a national training system for national engineers in charge of public infrastructure.

The GENSAI Project includes grant provisions for equipment and technical cooperation for reinforcement of public infrastructure for climate change adaptation as well as education for disaster prevention.[11]

In this way, now a more comprehensive approach to disaster risk management has been adopted in El Salvador. The goal of the GENSAI Project is to strengthen the infrastructure to protect the lifelines of inhabitants. On-going BOSAI and TAISHIN Projects are expected to produce synergy effects with GENSAI Project making the capacity to address the risk of natural disasters much more integral and effective.

It should be emphasized that specific, technologically and financially feasible options are essential in developing countries. Fiscal and other constraints of these countries' central and local governments and the low-income of the most affected inhabitants of the country should be

[11] Mikihiro Mori (2012)

Figure 15: GENSAI Project Brochure

Source: JICA El Salvador Office

fully taken into account. In the case of the BOSAI project in Central America, used tires are utilized to reduce the risk of land-slides and floods, etc. This innovative practice has been applied in Honduras, Costa Rica and El Salvador, using locally available low-cost materials. Another example is an inexpensive community flood early warning system with rain gauges and water glass.

As was mentioned in the previous Section, low-cost earthquake-resistant housing is another example. JICA started cooperation for CENAPRED, Mexico after the big earthquake in the central part of Mexico in 1985. The technology and innovative methods developed by CENAPRED have been used in the TAISHIN Project, aimed at furthering earthquake-resistant housing in El Salvador from 2003 through 2012. Then, experiences and innovation in the joint TAISHIN Project CENAPRED/JICA/Japan Institute of Construction/El Salvador were shared with Central America and other Latin American countries through the Japan Mexico Partnership Program (JMPP), as a South-South/Triangular cooperation project.

According to a study of the two large earthquakes that hit El Salvador in 2001, 60% of the houses destroyed were those of poor people whose income was less than twice the country's minimum wage. Houses made of improved adobe, soil cement, block panel, and concrete block were tested with their respective appropriate structures in the Large Structure Laboratories installed in the University of El Salvador and the Jose Simeon Cañas University of Central America. This Mexico-Japan-El Salvador South-South/Triangular project included the establishment of official technological standards for earthquake-resistant houses and institution buildings for the governmental urban and housing development agencies in charge of housing policies and construction permits.

Finally, it should be noted that further effort is necessary to address disaster risks especially in poor urban districts. Half of the global population resides in urban centers and urbanization is accelerating in developing countries. A close correlation is observed between urbanization and the number of natural disasters. The possibility of a "Type 3 Gap" increases due to rapid urbanization. Possibility of another "Type 3 Gap" increases as well due to climate change (floods, etc.). Furthermore urban slums have been expanding in risk areas in the case of many developing countries. Today, there are a billion people living in urban slums. We need to focus on disaster prevention for the urban poor.

In many developing countries, urban sprawl, slums and inadequate infrastructure provision are commonly observed in the process of urbanization. Programs of "urban redevelopment" with land readjustments could be an effective approach to address urban poverty, slums and disaster prevention. After urban areas are subdivided and settled, whether legally or illegally, it is extremely difficult to re-arrange property patterns, and it is both difficult and expensive to assure land for proper public purposes and facilities. Land readjustment is a public-private partnership model, which local governments, residents and landowners bearing the urban development costs and sharing benefits in places where land use patterns are inadequate and/or risky. Normally every transformed lot will be smaller than the original one due to the significant increase in public spaces, but lot value will be higher due to the added facilities as well as to improved safety and disaster prevention.[12]

[12] De Souza, Felipe Francisco and Cintia Estefania Fernandez (2012)

JICA has been supporting land readjustment initiatives in Sao Paulo and Curitiba, Brazil, and other developing countries. Several training courses to share the knowledge about land readjustment have been carried out in Brazil, Colombia and other countries through South-South/Triangular cooperation. Better urban land use taking into account risk areas should be one of the most important measures to avoid disasters.

In addition to different programs and projects of cooperation mentioned through this chapter in the area of disaster risk management, JICA independently and through the Japan Disaster Relief (JDR) system for years has helped nations and victims of natural disasters, offering emergency supplies and follow-up assistance to countries affected by natural disasters including Central American countries.[13]

7. Concluding Remarks

The current international framework for promoting the disaster prevention measures throughout the world is called the "Hyogo Framework for Action (HFA)" This is the document adopted at the Second United Nations World Conference on Disaster Reduction in 2005 by 168 participating countries, under the initiative of the UN International Strategy for Disaster Reduction (ISDR). It is the guideline showing the goals and prioritized actions in the area of disaster prevention throughout the world for the ten year-period from 2005 to 2015.

Interim evaluation of the Hyogo Framework of Action was implemented last year. From now on, along with aiming at the achievement of goals towards 2015, discussions will begin on the new post-2016 framework.
Lessons learned from Great East Japan Earthquake and Tsunami on March 11, 2011 and from other recent disasters as well as international efforts to prevent and reduce disaster risks, including South-South/Triangular cooperation to enhance the capacity of disaster risk management in Central America, one of the most natural disaster fragile

[13] In the last 10 years it implemented a series of disaster prevention projects (technical cooperation) costing 47.33 billion yen (500 million US dollars) in 147 countries. Grand aid projects totaling 38.15 billion yen (450 million US dollars) were implemented in 27 countries including the procurement of weather reader systems, radar, shuttle, construction of emergency evacuation centers and the rehabilitation of basic infrastructure such as schools, hospitals and water supply facilities. Financial cooperation (yen loan) totals 463.14 billion yen (5.7 billion US dollars) in 13 countries for urban drainage, river improvement, multi-purpose dam, etc.

regions in the world, should be reflected in this new post 2016 framework.

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Chapter 3
South-South/Triangular Cooperation and Capacity Development

Akio Hosono

1. ProSAVANA Project as an Example of Triangular Cooperation

In recent years, the ProSAVANA Project being carried out by Japan, Brazil and Mozambique has become a focus of wide attention. The project aims to develop agriculture in Mozambique's tropical savannah, drawing on Brazil's "Cerrado" development as a reference. The "Cerrado" tropical savannah in Brazil, once regarded as a barren plateau, has been transformed into one of the world's largest and most productive crop-agricultural regions. Brazil-Japan cooperation stretching back almost three decades to the mid-1970s was one of the factors which contributed to the process. The ProSAVANA Project is an agricultural development assistance program targeting synergistic effects from both promoting agricultural investment by the private sector and raising the incomes of the small-scale farmers. The program also aims to generate synergies from the development of agriculture and investment in infrastructure, keeping in mind a concrete proposal at the national level of the principles of "responsible agricultural investment" led by Japan.[1]

The idea behind the ProSAVANA project dates back to 2009. At a top-level meeting between Brazil and Japan at the L'Aquila Summit in July of that year, an agreement was reached to "develop agriculture in African tropical savannahs through Japanese-Brazilian cooperation by building on the achievements of the Cerrado agricultural development cooperation." Following this agreement, preparations were carried out in Brazil, Japan and Mozambique, and the ProSAVANA Project for cooperation to develop African tropical savannahs through collaboration between Japan and Brazil was launched in 2011.

[1] "Responsible agricultural investment (RAI)" was proposed by Japan on the occasion of L'Aquila Summit in July 2009. In September, 2009, Japan, World Bank, FAO, UNCTAD and IFAD organized a round-table discussion on "Promoting Responsible International Investment in Agriculture." These four international organizations made a joint proposal on RAI Principles in May 2010. (See RAI Knowledge Exchange Platform.)

The ProSAVANA Project was spotlighted internationally at the G20 meeting in November 2011. This attention was initiated by Bill Gates, co-chair of the Bill and Melinda Gates Foundation, who proposed to the leaders of each country the plan "Innovation with Impact: Financing 21st Century Development," in which he endorsed the ProSAVANA Project as a good example of an innovative partnership. Thereafter, in her keynote speech at the opening of the Fourth High Level Forum on Aid Effectiveness, a ministerial level meeting held in Busan, Korea, US Secretary of State Hillary Clinton described the ProSAVANA project as a model for triangular cooperation between a developed nation, an emerging nation and a beneficiary nation.

In May 2012, at the G8 meeting at Camp David in the United States, an agreement was reached on a New Alliance for Food Security and Nutrition targeting Africa. Six countries, including Mozambique, were selected as partner countries with the country plan for Mozambique to be co-chaired by Japan and the United States. The New Alliance can be said to share a common directionality with the ProSAVANA Project, for example, insofar as both are collaborations between the public and private sectors.

This chapter aims to consider the significance and challenges of South-South / Triangular cooperation and capacity development, both of which are features of Japan's official development assistance (ODA), by looking at specific case studies.

The ProSAVANA Project discussed above is an instance of full-scale triangular cooperation that is being implemented as part of the Japan-Brazil Partnership Program (JBPP). This chapter begins with a discussion of the features of South-South/Triangular cooperation, as well as the background to this type of cooperation taking the ProSAVANA Project as an example.

2. Japan's South-South/Triangular Cooperation

2-1 Growing Interest in South-South/Triangular Cooperation

In recent years, emerging nations have gained increasing prominence in the international community, notably for the increasing roles they are playing. As a whole, trade involving developing nations has risen to the point where it now occupies one third of all global trade, and the growth in trade by emerging nations is particularly remarkable. Such being the circumstances, South-South cooperation – that is, cooperation between

developing nations, and particularly cooperation provided by emerging nations to other developing nations – has played a significant part and hopes are high for the role of this type of cooperation. Moreover, the importance of triangular cooperation, whereby a traditional donor nation (a developed nation) assists this kind of South-South cooperation, is also being recognized. South-South/Triangular cooperation are often mentioned together as a single unit.

The Busan High Level Forum held in 2011 strongly reflected the changes of recent years. The Busan Partnership for Effective Development Cooperation emphasized the importance of South-South cooperation growth, and enumerated the following four points as specific methods for boosting this type of cooperation: 1) scaling up the use of triangular approaches to development cooperation; 2) making fuller use of South-South and triangular cooperation, recognizing the success of these approaches to date and the synergies they offer; 3) encouraging the development of networks for knowledge exchange, peer learning and coordination among South-South cooperation actors; and 4) supporting efforts to strengthen local and national capacities to engage effectively in South-South and triangular cooperation.[2]

Japan is a pioneer in South-South/Triangular cooperation, having started third country training programs as long ago as 1975. Japan started partnership programs (described below) for South-South/Triangular cooperation with several countries in 1994, and thereafter policies emphasizing triangular cooperation as an effective method for promoting development cooperation were set forth in the new ODA Charter in 2003.

However, South-South cooperation also faces challenges. In particular, concerned organizations have pointed out that when numerous small-scale cooperation projects are conducted the burden on the recipient country increases (transaction costs increase), that it is possible to end up with a number of disparate cooperation projects with a low level of interrelatedness (fragmentation) and that, as a result of these factors, the benefits of the aid tend to be limited.[3]

Japan's international cooperation, with its long history of South-South/Triangular cooperation, involves comprehensive cumulative efforts to

[2] The Forth High Level Forum on Aid Effectiveness (2011), p.10

[3] Ree Hyunjoo (2011)

ensure that cooperation is effective. This experience is likely to provide a valuable reference for the countries that are now trying to expand this kind of cooperation.

In the rest of this chapter, this experience will be analyzed on the basis of specific case studies.

2-2 Development of South-South/Triangular Cooperation

Looking back at JICA's history of South-South/Triangular cooperation, it is apparent that thoroughgoing efforts are expended to implement effective cooperation. Initially, these efforts centered on third-country training programs but, in order to conduct the programs effectively, one of the basic patterns was to team up with one of the counterpart institutions, with whom JICA had conducted bilateral technical cooperation in the past, as a base for triangular cooperation projects. The merit of this is that these institutions have a high level of capability, particularly with respect to their level of technical skills, as a result of the long period of cooperation. These institutions can also be described as Centers of Excellence (COE) in their respective fields.

The existence of these kinds of institutions is invaluable for South-South/Triangular cooperation, and the possibility of working with them as bases for cooperation means that they are regarded as important assets for JICA, as well. Accordingly, it is important to know what kind of capacity development (CD) process these institutions have developed to increase their capabilities, and what kind of institution building they have conducted as part of this process, as well as what kind of cooperation was effective in facilitating these processes. This chapter touches upon these points later.

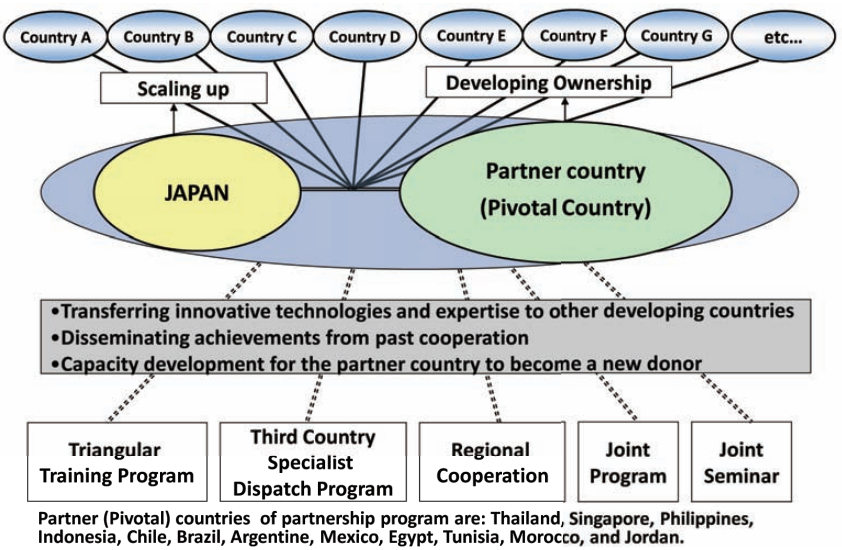
The High-Level United Nations Conference on South-South Cooperation in Nairobi in 2010 asked United Nations specialized agencies to help developing countries to establish or strengthen centers of excellence within their respective areas of competence.[4] Actually, from this perspective, Japan can be said to have contributed to the development of numerous centers of excellence in many countries around the world over a long period of time.

A second approach that deserves attention is the use of Partnership

[4] UN (2011), pp. 17-18

Programs (PP) implemented by Japan since 1994. Beginning with the Japan-Thailand Partnership Program in 1994, this approach has expanded steadily to the point where now agreements relating to partnership programs have been concluded with twelve countries (Thailand, Singapore, the Philippines, Indonesia, Chile, Brazil, Argentina, Mexico, Egypt, Tunisia, Morocco, and Jordan). The outcomes delivered by this approach have been enormous, although there is also variation from country to country. The partnership programs truly are frameworks for triangular cooperation teaming Japan, the pivotal (partner) country of South-South cooperation, and beneficiary countries in a well-coordinated fashion. One advantage of partnership programs is that cooperation can be implemented efficiently, as these programs enable triangular cooperation to be conducted systematically through regular meetings and discussions, and can also be combined with a range of schemes, such as triangular training programs, third-country expert programs, regional cooperation, joint programs, and so on. (See Figure 1.)

Figure 1: Partnership Program (Advanced/Structured Form of Triangular Cooperation)



Source: Prepared by the author

A third effective approach that has attracted increasing interest in recent years is the South-South/Triangular cooperation which is being conducted over a wide area and which is based on regional integration/

cooperation frameworks and so on. Specifically, wide area cooperation is being actively pursued in the ASEAN and in Central America. JICA is conducting regional cooperation projects directed at making an ASEAN community a reality and assisting the Master Plan on ASEAN Connectivity. The latter consists of assistance for the creation of the East-West corridor, the Southern corridor, and the sea-based ASEAN economic corridor. Cooperation directed at AUN/SEED-Net (the South East Asia Engineering Education Development Network, an autonomous sub-network of the ASEAN University Network) and the Asia-Pacific Development Center on Disability are also being conducted.[5]

In Central America, South-South/Triangular cooperation is being conducted over a wide area in collaboration with the Central American Integration System (SICA). This cooperation is based on the Tokyo Declaration and Action Plan adopted by the Japan-Central America Summit Meeting in 2005, and consists of cooperation in areas such as measures to tackle Chagas disease, mathematics education, disaster resilience, reproductive health, and quality and productivity improvements. In Africa as well, region-wide cooperation aimed at strengthening mathematics and science education (SMASE-WECSA) is also being conducted. Wide area South-South/Triangular cooperation based on platforms such as regional organizations is an effective approach for tackling challenges that are common to the whole region.

3. Capacity Development as Basis for South-South/Triangular Cooperation

Capacity development generally refers to the process whereby the capacity for addressing issues in a developing nation improves on aggregate at multiple levels, including the level of people, organizations and society as a whole.[6] The features of this approach are that it defines capacity as the ability for the individuals, organizations and social institutions of the developing nation to identify what the issues are for themselves and to address these issues by themselves, and that it emphasizes endogenous and autonomous efforts treating the concept of capacity inclusively, with a broad vision that includes, but is not limited to, individuals and organizations.

This perspective, which presupposes endogeneity and inclusiveness,

[5] See JICA (2012) and Ninomiya, Akiie (2010)

[6] This is how capacity development is defined in OECD/DAC (2006), and the UN also follows this definition. See Hosono, Akio et al. (2011), p.180

differs from the traditional perspective whereby technology is transferred in order to fill in a perceived gap resulting from a technology deficit; instead, donors are expected to try to cooperate by fulfilling the role of catalyst in this process. In this kind of process, the parties involved in capacity development, together with other stakeholders, are expected to work together to address issues and find solutions by first having a clear awareness of the issues to be addressed and then learning from one another (including donors).

This process can be thought of as a process of mutual learning and co-creation of innovative solutions (both technologies and systems), based on a thorough awareness of the issues to be addressed. Rather than simply transfer technology, the idea is that donors participate in learning and co-creation as actors entering from outside, and can contribute to capacity development by fulfilling the role of catalysts as "facilitators", so to speak.[7]

The significance of South-South/Triangular cooperation must also be considered from this perspective. Below, the case of the Cerrado development mentioned at the beginning of this chapter will be discussed from this approach.[8]

The nature of the technologies needed for the agricultural development of the Cerrado was not such that it could be transferred from the country of the North providing aid. That is to say, none of the Cerrado vegetation can be found in Japan, and Japan had almost no relevant experience in terms of how to go about transforming the Cerrado soils, which were not suitable for agriculture, into farmland. It is not an exaggeration to say that it was necessary to start from scratch. However, Japan did have technologies for analyzing soil and so on, and was able to make these technologies available. The development of varieties of soy beans and corn that could be grown in the tropical zone where the Cerrado is located also had to take place from scratch. Japan had no corresponding experience of tropical agriculture. This meant that the mutual learning and co-creation of innovative solutions emphasized by the capacity development process described above were literally essential.

[7] Hosono, Akio, et. al (2011)

[8] For details on JICA's cooperation for the Cerrado development, see *Hosono, Akio and Yutaka Hongo (2012)*.

Cerrado: Scenery before the Cooperation for Cerrado Agricultural Development
Sourse: Yutaka Hongo, JICA

The two technological innovations of soil improvement and variety improvement were prerequisites for agricultural development in the Cerrado, but it was the Brazilian Agricultural Research Corporation (EMBRAPA) and the affiliated Cerrado Research Center (CPAC) that made these innovations a reality. Cooperation continued from 1977 until 1999, with the Cerrado Agricultural Development Research Project implemented by JICA in two phases centering on CPAC, followed by the Cerrado Agricultural Environmental Conservation Research Project.

In 2006, Dr Edson Lobato, famed for his achievements in soil research, was awarded the World Food Prize. Dr Pilinio Itamar de Mello de Souza developed a revolutionary tropical variety of soy beans over a five year period. EMBRAPA named this variety the "Doko" soybean after Toshio Doko, a Japanese national who contributed greatly to strengthen Brazil-Japan economic relations and cooperation for many years. The many researchers from Brazil and Japan, including Lobato and Souza, are the ones who did the heavy lifting to make Cerrado agriculture a possibility. Through this process – which took more than twenty years – the efforts directed at technological innovation through collaboration between Japanese and Brazilian researchers can be said to have borne fruit. Souza

has said, "When I was young, I learned a great deal from the research attitude of the technical experts from Japan, including JICA specialist Yo'ichi Izumiyama (an expert in plant cultivation). Now it is my turn to set an example, as Izumiyama set an example for me."

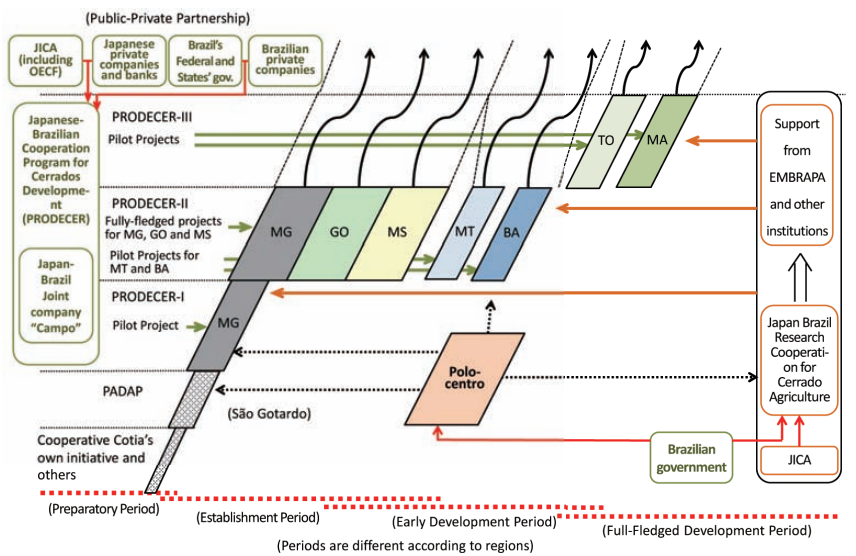
Cerrado: Scenery after the Cooperation for Cerrado Agricultural Development
Sourse: Yutaka Hongo, JICA

In this process, JICA's technical cooperation can be described as having contributed to the development of EMBRAPA by improving the capacity of CPAC. EMBRAPA has been extremely proactive in rapidly lifting its capacity through an approach that Dr. Eliseu Alves, one of the founders of EMBRAPA, describes as "the EMBRAPA Model". EMBRAPA is now a Mecca for tropical agriculture known all around the world, and it is a presence well-deserving of the appellation "Center of Excellence". As of 2010, the 8,100 EMBRAPA employees included 2,100 researchers, and the number of staff holding a doctorate degree (just a few when EMBRAPA was first inaugurated) stood at more than 1,600. The sequence of events leading to this standard of achievement can be described as a truly autonomous capacity development and institutional building process.

However, it was not just the organizational influence and capabilities of EMBRAPA that made Cerrado agriculture a reality. Agricultural producers, who actively took up new technologies and improved their own capabilities, made significant contributions, and agricultural cooperatives, such as the joint Brazil-Japan public-private company, Campo, and other local entities played a significant part in the dissemination of these technologies. Thus, Brazil can be said to have raised its capacity to promote the development of the Cerrado as a multilayered whole inclusive of individuals, organizations and social institutions, such as numerous producers and their organizations, with EMBRAPA conducting research and development and the federal government developing agricultural policies.

The agricultural development of the Cerrado itself was promoted by the Japan-Brazil Agricultural Development Cooperation Program (PRODECER). Financial cooperation from JICA and OECF was mobilized as part of this program. This program was carried out over a period of about twenty years, gradually scaling up in the three phases promoted by PRODECER; the first phase focusing on trial projects in Minas Gerais, the state where Cerrado agriculture began; the second

Figure 2: The Japan-Brazil Agricultural Development Cooperation Program (PRODECER)



Source: Prepared by the author

phase consisting of full-scale projects in Minas Gerais and two adjacent states as well as trial projects in the states of Mato Grosso and Bahia; and the third phase extending the program to the Cerrado agriculture frontier states of Tocantins and Maranhão (see Figure 2).[9]

Even after completion of PRODECER, the expansion of agriculture in the Cerrado has continued dynamically with progress in areas such as an expansion of the area of land under cultivation, improvements in productivity, diversification of the crops being produced, and expansion of the downstream value chain, such as agricultural processed goods. Brazil has overtaken the United States in terms of the production and export of soybeans, and is expanding its share of the global market for soy beans, corn and other grains. Moreover, the diversification of the agricultural and grazing industries has included labor intensive agriculture which, when combined with the expansion of the value chain, has meant that employment growth in the Cerrado regions has

The city of Lucas do Rio Verde, one of the focal points of the Cerrado agricultural development by PRODECER, as it appears today (2001). Environmental conservation zones where virgin nature has been preserved: dark green area running through left of center and crop fields (light green area) stretching to the horizon.
Photo source: Municipality of Lucas do Rio Verde

[9] For details on the development of Cerrado agriculture, see Hosono, Akio and Yutaka Hongo (2012).

exceeded that in other regions, so that the expansion of Cerrado agriculture has also contributed to reducing poverty and narrowing the gap between regions. Furthermore, from the beginning of Cerrado development there have been initiatives to protect the environment and ecosystems. In this sense, Cerrado agriculture can surely be described as inclusive, sustainable development.

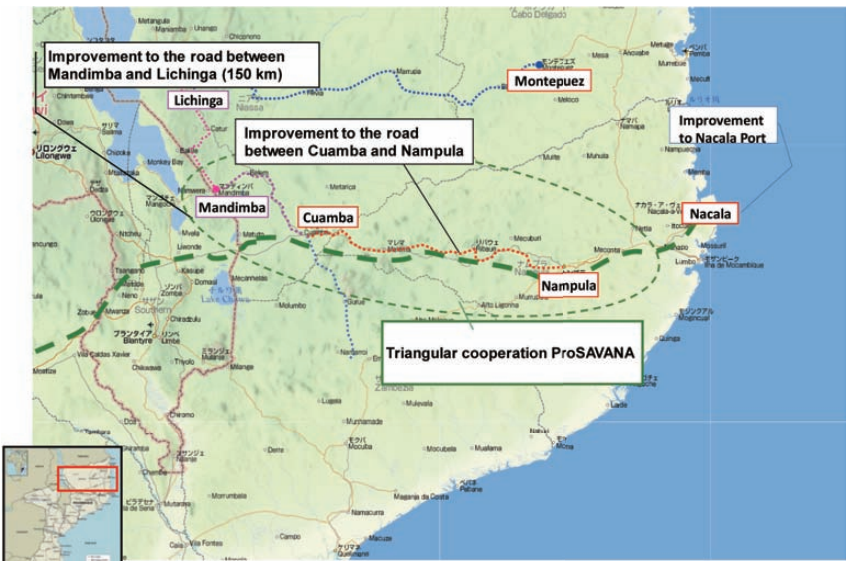
The expansion of Cerrado agriculture is described by former Brazilian President Lula as Brazil's agricultural revolution, and by a 2010 feature article in *The Economist* magazine as "The miracle of the Cerrado". Dr Norman Borlaug, who received a Nobel Prize for his part in the Green Revolution, endorsed Cerrado agriculture as "one of the great achievements of agricultural science in the 20th century".

4. Japan-Brazil Partnership Program and Expansion of Triangular Cooperation

As was mentioned earlier, the ProSAVANA Project is pursuing agricultural development in Mozambique through tripartite cooperation among Japan, Brazil and Mozambique, drawing on the experience of the Cerrado development. The benefits of having three countries implement the project are numerous and varied. Mozambique is an agricultural nation with 80 percent of the workforce engaged in agriculture. Brazil has the experience of developing Cerrado agriculture, and has an excellent stock of technologies for tropical agriculture. Also, both Brazil and Mozambique are former Portuguese colonies, so they share a common language. The regions targeted by the ProSAVANA Project are located in the northern part of Mozambique and have a great deal in common with the Cerrado regions in Brazil, particularly where the savannah extends around the Lichinga Plateau.

Progress has also been made in the form of improvements to infrastructure as a result of Japanese cooperation projects, and these are expected to have synergistic effects with the ProSAVANA Project. Asphalt paving for the roadway between Nampula and Cuamba (part of the Nacala corridor, one of the major arterial roads) is scheduled for completion during 2014. This project is funded by Japanese financial cooperation. Technical cooperation started at the Nacala port in April 2012, and it is also likely that financial cooperation will be implemented for the roadway upgrades between Cuamba and Lichinga. (See Figure 3.)

Figure 3: The ProSAVANA Project Teaming Japan, Brazil and Mozambique

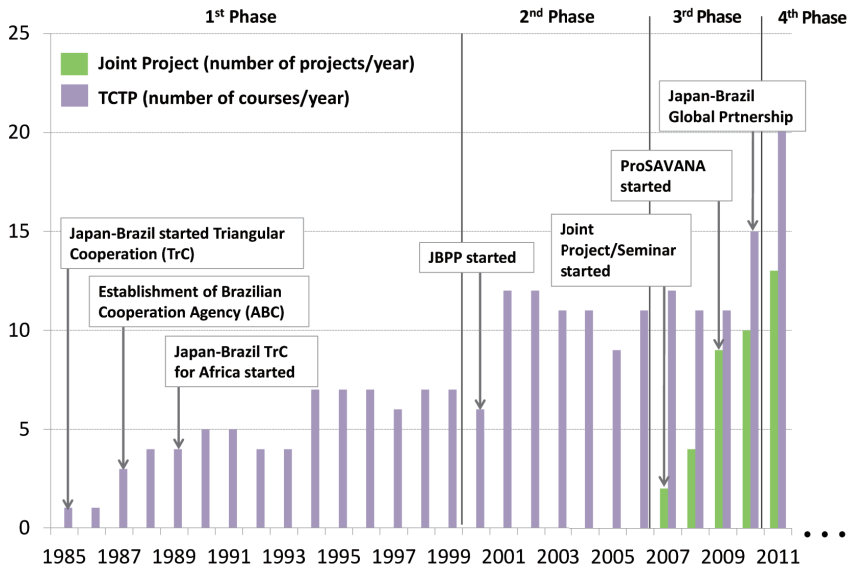


Source: Prepared by the author based on JICA's information

The ProSAVANA project is being implemented as part of the Japan-Brazil Partnership Program (JBPP). As discussed earlier, partnership programs are an effective approach for South-South/Triangular cooperation. The JBPP is one such program. But even before the start of the program in 1990 Japan-Brazil triangular cooperation was ongoing (1985) in the form of third-country training programs and other projects, so triangular cooperation joining Japan and Brazil as partners dates back more than twenty years. If triangular cooperation with Brazil prior to the conclusion of the JBPP in 1990 is taken as the first phase, then the second phase started with the inauguration of the JBPP, while the period starting with the joint projects and joint seminars in 2007 is the third phase, and the period since cooperation started based on the new concept of "Japan-Brazil Global Partnership for the solution of global issues" in 2010 can be viewed as the fourth phase.[10] From the start of the third phase until September 2011, Brazil and Japan had conducted 13 joint projects, 13 joint seminars, and 16 new third-country training programs. Not only have the numbers increased, the scale of each

[10] Sakaguchi, Kota (2011)

Figure 4: Japan-Brazil Triangular Cooperation



Source: Kota Sakaguchi (2011)

project has increased dramatically, and projects expected to have a large impact have been launched, one of which is the ProSAVANA project. (See Figure 4.)

Many other cooperation projects implemented through the JBPP deserve attention. The Japan-Brazil global network for protecting tropical rainforests is one of them. This project aims for truly global expansion, targeting South East Asia and non-Portuguese-speaking Africa, such as the Congo Basin. As the country with the largest tropical rainforest in the world, Brazil is carrying out advanced initiatives for protecting tropical rainforests, and bilateral cooperation between Brazil and Japan has also contributed to the formation of models for protecting tropical rainforests.

The Advanced Land Observing Satellite "DAICHI" (ALOS) operated by the Japan Aerospace Exploration Agency (JAXA) uses microwave sensors rather than optical sensors, and so using this data makes it possible to monitor tropical rainforests for illegal logging around the clock and even under conditions of heavy cloud cover. This has been highly effective in suppressing illegal logging, and in recent years the

Extensive forest of Amazon
Picture: Yutaka Hongo, 2009

Rainy season of Amazon. Rain shower to the forest.
Picture: Yutaka Hongo, 2009

JAXA's ALOS satellite
Picture: JAXA

ALOS 2 is scheduled to be launched in 2013.
Picture: JAXA

area of tropical rainforest lost in the Amazon has declined sharply. "DAICHI" is the only satellite orbiting the earth that uses this technology, and so the benefits of Japan's international cooperation can be seen on and above the earth.

This technology and experience is eagerly sought by countries with tropical rainforests around the world, and so Japan and Brazil are working jointly to implement triangular training such as "Monitoring tropical rainforests from space satellites" and "Spreading agroforestry to address fragmented forests".

There is also a great deal of interest in collaboration and cooperation between Japan and Brazil to improve public security in Central America. Since the year 2000, Japan and Brazil have implemented bilateral technical cooperation to extend local policing activities based on the *koban* ("police box") model in São Paulo state, which used to have a high crime rates. This cooperation project has contributed to concrete

outcomes such as a 70 percent reduction in the murder rate in the city of São Paulo. Japan and Brazil are working jointly to bring training programs for improved public security to the countries of Central America interested in the São Paulo model. Here, dialogs have been continuing since 2005.

Both of these two cases are driven by ongoing bilateral cooperation for capacity development and they are making progress in innovative technological solutions and associated systems, as well as institution building. South-South/Triangular cooperation continues to be actively conducted based on this experience, and with Brazil playing a central role.

5. Synergistic Effects between South-South/Triangular Cooperation and Capacity Development

The current interest in South-South cooperation is expected to grow even further in the future. But in order to avoid the fragmentation discussed earlier and the rising transaction costs resulting therefrom, the use of several effective approaches will most likely be necessary (such as those mentioned so far in this chapter) as well as assigning priority to those areas where the expected benefits peculiar to South-South/Triangular cooperation are more significant than can be achieved using traditional cooperation.

Concrete examples of this cooperation are areas of cooperation that cannot be performed by developed nations. These are responses to issues faced by more than one developing nation, but for which developed nations do not have adequate expertise. Examples include areas such as tropical agriculture and tropical diseases. Developed nations tend not to be located in tropical climates, so they usually lack the store of technologies for agriculture peculiar to this kind of climate, for example. The case of Brazil's Cerrado discussed above is an excellent example of such an area, and it is unlikely that a developed nation would ever be able to accumulate a level of experience and technology equivalent to that which exists in Brazil. EMBRAPA receives cooperation requests from numerous countries. The same applies to measures to combat the illegal logging in tropical rainforests. Chagas disease, which is found in South America and Central America, is almost completely unknown in developed nations. Cooperation in these areas would be difficult if not for South-South cooperation, and the triangular cooperation that supports this South-South cooperation is highly

significant.

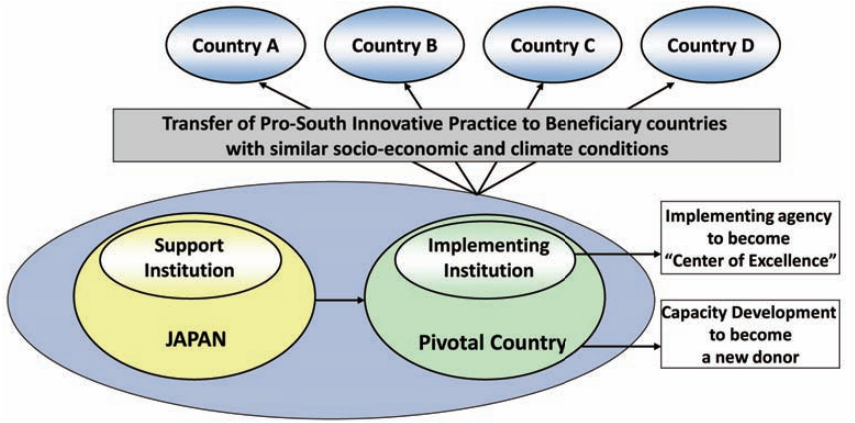
Similarly, developing nations generally have large numbers of poor people, and so have a need for low-cost housing, a situation that differs from what is found in developed nations. Earthquake-resistant housing, for example, would be expensive if constructed using the materials used in developed nations, and so meaningful cooperation cannot be achieved without innovating in ways appropriate to the reality of the developing nation. However, the lost-cost building materials that are available in developing nations are not necessarily known in developed nations.

For many base-of-the-pyramid (BOP) businesses as well, it is necessary to innovate by developing products and services that are appropriate to the reality in developing nations, so that these products and services can be the ones the poor really need, and can afford to actually buy. The well-known Olyset Net mosquito net, which is increasingly being adopted as part of the fight against malaria, is one such example. This kind of technology and experience has an important significance in mutual cooperation between developing nations. This can be described as an area where there is huge potential for the impact of South-South/Triangular cooperation.

Thus, the particular importance of the kind of capacity development perspective described earlier should be emphasized once again when it comes to tackling challenges specific to developing nations. This is because these challenges cannot be solved simply by transferring technology from developed nations. This point should be explored further, taking as an example the construction of earthquake-resistant buildings that can be provided affordably.

The huge earthquake that struck Mexico in 1985 caused massive damage in many places, including in the capital, Mexico City. Afterwards, the Japanese government cooperated with the establishment of CENAPRED (the National Center for the Prevention of Disasters), as well as the building up of capacity and creating systems. In recent years, CENAPRED has raised the level of its functions as a center of excellence in this area. In particular, CENAPRED fulfilled an important role in the implementation of the TAISHIN project in El Salvador, based on the framework of the Japan-Mexico Partnership Program (JMPP).

Figure 5: Triangular Training Program (Third Country Training Program)



Source: Prepared by the author

El Salvador is one of the most vulnerable countries in the world when it comes to natural disasters. The huge earthquake that struck El Salvador in 2001 left many injured and homeless. About 60 percent of the homes that were destroyed belonged to the poor. The TAISHIN project was started out of recognition of the importance to develop houses with good earthquake-resistance for low-income earners. The project, which started with a process of mutual learning oriented at solving problems, involved researchers from El Salvador (mainly from the University of El Salvador and "José Simeón Cañas" Central American University), Mexican experts from CENAPRED and Japanese experts from the Building Research Institute of Japan.

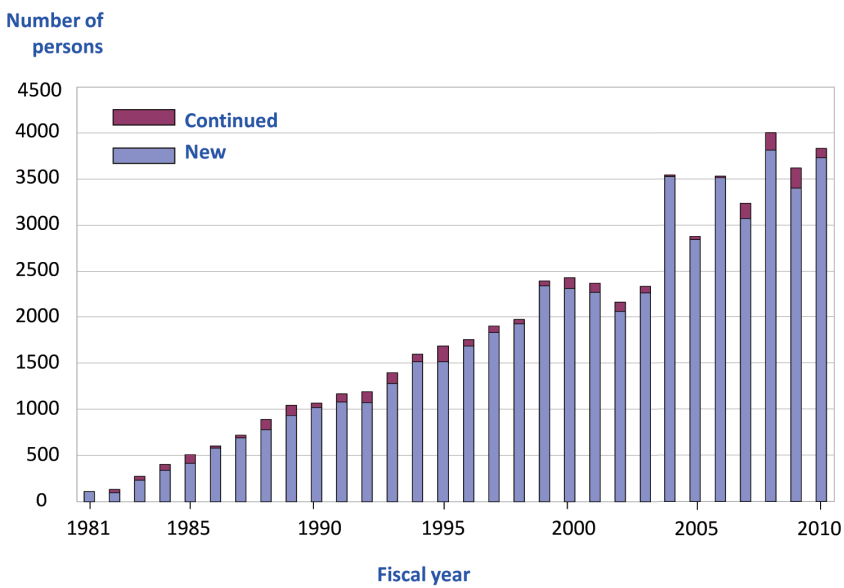
Of the building materials currently available, among the cheapest and most readily available are the sun-dried bricks known as "adobe" and "soil cement" (a building material for economizing on the amount of cement used through its 10-parts soil and 1-part cement ratio. Japan has no experience with these materials. Other circumstances were also significantly different from those in Mexico. These materials were used, together with the expertise from Mexico, to produce various combinations of raw materials and designs which were tested for anti-seismic properties in seismic testing laboratories of each university. The laboratories were capable of testing large structures. After numerous tests, the researchers were able to develop an earthquake-resistant model

house that could be produced at low cost. This is an excellent example of technical innovation and the creation of expertise through collaboration. South-South cooperation extended further to other Central American countries and elsewhere, such as Haiti. Thus, a center of excellence was first created in Mexico, and the capacity development process then progressed further in El Salvador.

The various examples that we have touched upon so far in this chapter illustrate the necessity of a capacity development perspective in South-South/Triangular cooperation. Normally, "knowledge exchange" is emphasized as a method of South-South/Triangular cooperation, but from these examples we can go further and see the importance of cooperation directed at mutual learning, collaborative problem-solving, and the co-creation of innovative technologies and expertise.

It is known that centers of excellence also make progress in terms of capacity development as institutions through the process of South-South/Triangular cooperation. For example, the Faculty of Marine Science of Chile's Universidad Católica del Norte developed as a center of excellence in Latin America in the area of shellfish

Figure 6: Triangular Training Programs Organized by JICA

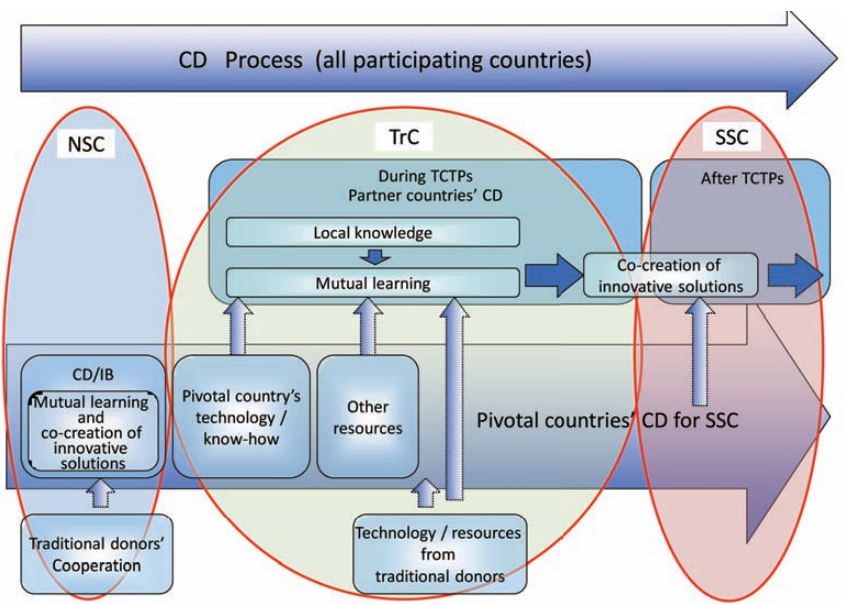


Source: JICA

aquaculture. The starting point was the beginning of a project to cultivate Chilean scallops in 1981. Aquaculture had not been conducted until then, but a scallop aquaculture industry was established in about eight years, and Chile is now the third largest exporter of scallops. There has been mutual learning between Chilean researchers, Japanese specialists, Chilean aquaculture companies and fishermen, as well as problem-solving initiatives and an accumulation of research. These paved the way to development of aquaculture technologies appropriate to local conditions. This can be regarded as having been an endogenous, inclusive capacity development process.

Thereafter, South-South/Triangular cooperation started in 1988, as the Faculty began the process of capacity development as an international cooperation institution. In the twenty year period up until 2007, the Faculty conducted a third-country training program, accepting 400 trainees from 16 Central and South American countries, selected from 1200 candidates. In this process, the Faculty built a strong network with other relevant parties attempting to develop aquaculture as an industry in Central and South America. Moreover, in the process of carrying out

Figure 7: Seamless CD Process toward SSC/TrC



Source: Prepared by the author

cooperation projects, the Faculty was able to learn about the state of development of the aquaculture industries in each of these countries in great detail. This laid the groundwork for the successful implementation of even more advanced cooperation projects in Peru, Ecuador, Brazil, Columbia, Venezuela, and El Salvador. The crucial factors that made this possible were trust, the network of relevant parties built up over a long time, and a detailed understanding of the local conditions. This suggests that the Faculty's capacity to function as a center of excellence grew over time as a result of its involvement in South-South/Triangular cooperation. (See Figure 7.)

In this way, triangular cooperation also fulfills a role in assisting the process of countries becoming new donors. In the cases described above, the assistance was directed at enabling centers of excellence in specialized areas to become donors, but it should be pointed out that triangular cooperation also leads to a strengthening of the capacity for cooperation of the institutions in developing nations that provide aid through South-South cooperation. This is a particularly significant benefit in partnership programs.

6. Conclusion

To sum up, the following points are likely to be important if we are to aim for the further expansion of South-South/Triangular cooperation. Firstly, in those areas where South-South/Triangular cooperation offers comparative advantages that only these forms of cooperation can provide, we should aim to draw out these benefits to the greatest extent possible. Secondly, we should make full use of proven approaches that have delivered successful outcomes so far, such as effective triangular training programs organized around Centers of Excellence, partnership programs, and wide-area approaches collaborating with organizations for regional integration/cooperation as platforms. Thirdly, we should make the "capacity development" perspective mainstream in South-South/Triangular cooperation as well. Japan is a pioneer in South-South/Triangular cooperation, and has a great deal of valuable experience in this area. Moreover, the existence of Centers of Excellence in various countries that have been made possible through Japan's previous cooperation projects is a key asset for future South-South/ Triangular cooperation. It is expected that these advantages can be used to further strengthen and scale up South-South/ Triangular cooperation.

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Chapter 4
Scaling Up South-South and Triangular Cooperation

Hiroshi Kato

1. Introduction[1]

As suggested in the Introduction of this volume, the challenges that the global community face in the 21st century will call for a new architecture of development cooperation that is no longer based on the dichotomy of north-south or south-south. Tomorrow's international cooperation will increasingly become a process of horizontal "mutual learning" and "joint solution discovery" rather than that of vertical and uni-directional resource transfer from the provider's side to the recipient's side.

South-south cooperation (SSC) as we know it today is already leading us in that direction; it is indeed promoting active interactions for mutual learning in a horizontal and multi-lateral manner and involving an increasing number of heterogeneous players. The remaining challenge is how to scale up SSC, in such a way that it will evolve into a system that we aspire to have.

Scaling up of SSC, however, is not an easy challenge; indeed there seems to be a number of challenges involved in SSC. We are aware that many of SSC projects are not completely immune from the problems that have often been associated with traditional north-south cooperation: oft-cited are such problems as the lack of institutional mechanisms, high transaction costs, and their tendency to be fragmented and short-lived. Rhee (2011) pointed out financial constraints and the high transaction costs associated with the process of matching the supply and demand before starting SSCs. Our task, then, must be to seek ways to overcome these possible problems for effective scaling up of SSC.

[1] The arguments developed in this chapter rely to a considerable degree on the case analyses presented in this volume. However, the views expressed herein are solely those of the author of this chapter and do not necessarily represent the views of case authors or those who contributed to the case analyses.

In addressing this issue, this chapter will explore possible factors to increase the likelihood of successful scaling up of SSC. The term "scale up" here is defined as the process of "expanding, adapting, and sustaining successful policies, programs, or projects in different places and over time to reach a greater number of people.[2] By using the term scaling up I do not necessarily imply that the activity must always be large in input, significant in impact, or wide in coverage; rather, we define the project scalable or scaled up if it has some expansionary positive feedback cycle built in it providing energy for continued growth.

We will look at the scaling up issue from three angles. *First*, we would like to pay particular attention to what kind of ***knowledge*** is being created through successful SSC projects. We pay special attention to the issue of knowledge based on the shared assumption in the international development community that knowledge - knowledge sharing and knowledge creation - is the key for successful development.[3] *Second*, we will pay close attention to the issue of ***institutional arrangements*** to make such knowledge creation through SSC sustainable. Lastly, we will look at the ***process of capacity development*** at the national level - and the ways to assist such processes from outside – in building up such institutions. Building-up such SSC-supporting institutions takes years and persistent effort, but there are good examples offering rich experiences to draw lessons from.

With these definitions and viewpoints, in the following section, this paper attempts to explore what factors in terms of knowledge, institutions, and capacity building increase the likelihood of SSC's scaling up. It will look at the issue both from the short-and medium term perspectives at the project level as well as from the longer-term perspective at the national level.

We base our discussions on cases of triangular cooperation (TrC) projects in which Japan was involved, for being a "traditional" donor, Japan's SSC-related activities are by definition TrC projects.

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[2] Hartmann and Linn (2008), and Linn (2011).

[3] The recently held High-Level Meeting "Towards Country-led Knowledge Hubs" (10-12 July, Bali, Indonesia) organized by the Government of Indonesia, the World Bank, UNDP, and JICA represents such interest.

2. SSC as a Knowledge Creation Process

SSC is likely to succeed and to be scaled up when it deals with types of knowledge particularly relevant to the context of developing countries. Hosono (forthcoming) argues there are certain knowledge areas in which SSC can be particularly effective. These kinds of knowledge are usually not readily available from the north, and they have to be discovered, created, and internalized through SSC. They are: (1) knowledge pertaining to possible solutions adapted to the needs of a certain southern country (e.g., solutions to problems faced by landlocked LICs), (2) knowledge pertaining to possible solutions related to the challenges of the global-south (e.g., developing effective BOP business model in a specific context) and, (3) knowledge pertaining to possible solutions that must be shared among north and south countries for global challenges (e.g., on climate change and disaster management).

Based on this understanding, we will look at two SSC cases to see how knowledge creation takes place.

Case 1: Better Hospital Service Program in Africa[4]

The first case is the "Better Hospital Service Program," a tri-partite joint venture involving fifteen African countries, Sri Lanka, and Japan. The idea of the program is to introduce some management tools such as "5S," "KAIZEN,"[5] and Total Quality Management (TQM) in improving hospital services and health care. The program has been progressing to the satisfaction of the participants since it started in 2007; actions are continuously implemented by participating hospitals to improve the working environments and the services they provide. Such actions have resulted, for example, in tangible outcomes such as shorter waiting times for patients for clinical examinations in pilot hospitals. This movement is spreading both within and across participating countries, with Tanzania functioning as the pivotal center. At the policy level, the 5S-KAIZEN-TQM approach has been mainstreamed in Tanzania and Kenya. Among the participating countries, Tanzania stands out with 56 participating hospitals, whose capacities have been so developed as to have become able to offer training programs to peer African practitioners.

[4] For a detailed description, please see Case 2 of this booklet.

[5] "5S" stands for the five key practical steps for better productivity in the work place, and they are: Sort, Set, Shine, Standardize, and Sustain. KAIZEN is a Japanese word meaning "improvement," or "changing for the better." It is a concept or philosophy that emphasizes the importance of a continuous process of improvement in engineering, manufacturing, and business organizations.

The successful progress of the program thus far has been driven by several forces.

First, there was a strong demand for knowledge on hospital management; before the project started in 2007, medical and health professionals in Africa were feeling the strong need for better-quality care and medical safety at their hospitals, which drove the movement forward. From the project, we observed, little to our surprise, that the stronger the need for knowledge, the more dynamic the knowledge acquisition and creation processes are; Tanzania, which apparently had the strongest need for hospital improvement among the participating countries, has grown into the regional center of excellence through the application of 5S-KAIZEN-TQM.

Second, knowledge cannot be created *ex nihilo*, and there must be a body of knowledge that serves as the base on which further knowledge creation takes place. In this case, luckily, the base knowledge and role model to learn from was available in an Asian island country - Sri Lanka; it had been developed by Dr. Karandagoda, a doctor who was then a hospital director. Adjusting what he had learned about 5S-KAIZEN-TQM from Japanese firms operating in Sri Lanka, Dr. Karandagoda had adopted and improvised various management tools to suit the Sri Lankan local contexts, which were then applied to his hospital. That this system of knowledge was available meant a lot to the African health professionals. Comprising simple, flexible and low cost techniques and skills, Dr. Karandagoda's system has been tested and proven effective in the developing country context of Sri Lanka, a context shared by many African counterpart countries. The application of such knowledge entailed minimal costs, not requiring expensive professional consultants' help for internalization.

Third, it is noteworthy that Dr. Karandagoda had developed the knowledge system himself as a problem solver. This experience of his may have played an important role in making him an excellent mentor to his African counterparts.

And fourth, the triangular cooperation arrangement provided African, Sri Lankan and Japanese experts to actively interact and learn from one another. The interaction opportunities included training sessions in Sri Lanka and Japan, monitoring and field visits to African hospitals by Sri

Lankan and Japanese experts, and additional support to individual African country by JICA.

Case 2: Earthquake-resistant Housing Project in El Salvador[6]

The second case is an earthquake-resistant housing development project in El Salvador, a triangular cooperation project supported by Mexico and Japan.

The project's most notable achievement was the development of an affordable housing model for low income households. There were four types of local housing construction methods in El Salvador, using as main materials, respectively, soil cement, block panels, adobe, and concrete blocks. None of these construction methods, however, had been tested and validated for their earthquake resistance performance. This validation was accomplished by the project, which culminated in the development of a housing model applicable nationwide.

The success of the project was driven by several driving forces. ***First,*** there was desperate need for and commitment to obtain applicable knowledge on earthquake-resistant housing in El Salvador, a country that was devastated by a horrendous earthquake in 2001, and the hardest-hit victims being the poorer segments of society. Hence, there were fully-committed experts in El Salvador, primarily comprised of government agencies and universities. ***Second,*** just like in the above-mentioned case, there was a body of knowledge based on which new knowledge could be developed. In this case it was the technological support provided by the experts from Mexico[7]. Mexico, a country of frequent earthquakes, was already building up its willingness and capacity to extend cooperation to its neighbor. ***Third,*** an important point in the case is that the Mexican organization that provided technological support (CENAPRED) had not only "owned" anti-seismic housing technologies as mere textbook knowledge, but also had the experience of having recently tackled the same sort of challenge, and developed such technologies on their own, based on the country's experiences in dealing with repeated earthquakes. ***And fourth,*** the triangular cooperation arrangement facilitated interactive knowledge creation by the Salvadoran experts, who also were familiar with the local contexts,

[6] For a detailed description, please see Case 5 of this booklet.

[7] The capacity development in anti-earthquake housing in Mexico was supported by a Japanese cooperation.

Mexican experts, who provided technical expertise, and Japanese experts, who supported and facilitated the collaboration in various ways – financially, technically, and as facilitators.

The Process of Knowledge Creation

So far we have looked at two SSC/TrC cases from the knowledge creation perspective. Our observations include, among others, the following:

- ✓ Strong need for knowledge must be at the very core of successful SSC/TrC projects.
- ✓ For effective knowledge creation there must be a knowledge base to develop from.
- ✓ It helps greatly if those who developed the original knowledge base participate actively in the process of knowledge creation with their partners.
- ✓ Knowledge creation can be most effective when it is realized through the interaction of practioners who own the same or similar problems.

Similar knowledge creation processes can be observed in many other cases.

In a Haiti-Dominican Republic-Japan triangular agricultural technology project,[8] positive learning activities took place among the Haitian practitioners even in extremely difficult working conditions: after their return from training courses in the Dominican Republic, the Haitian participants are starting to organize, voluntarily, activities to share knowledge and information among them, and their enthusiasm has resulted in a proactive organization of an advanced training course. Here factors similar to the African Hospital and Salvadoran housing cases can be observed: the Haitian participants had strong needs for leaning; the Dominican counterparts were quite willing to provide support and had base knowledge to share with the Haitians; and the project created a space for interactive learning among the professionals.

A similar process of knowledge creation has taken place also in a project on livestock hygiene for animal health in South America involving Argentina, Bolivia, Paraguay, and Uruguay.[9] Since its start in 2005, the

[8] For a detailed description, please see Case 6 of this booklet.

[9] For a detailed description, please see Case 7 of this booklet.

project has created an ample body of knowledge among the participating professionals, making possible clinical and epidemiological examinations of many animal diseases which were previously impossible. The success factors in this project have been threefold: the participants all had strong needs to develop a body of knowledge on dangerous veterinary diseases; the project had the knowledge base developed in Argentina, which had been developed with the support of Japan, and the interaction and mutual learning among scientists.

3. Institutional Support for Scaling Up Knowledge Creation

As shown above, successful SSCs are observed to have strong demand for knowledge acquisition as a innate driving force, as well as a knowledge base to capitalize on and collaborative interaction between the practioners who "own" the same or similar problems.

If SSCs are to be sustained and scaled up over the long term, these favorable conditions must be maintained and reproduced. If not, the initial enthusiasm could be lost, initiatives of visionary leaders undermined, participants' incentives reduced, and allocated resources dried up. To avoid such negative feedback loops from taking place, projects must have institutions. The need for such institutional support is relevant to any developmental effort but is particularly relevant in developing countries.

As effective institutions for support scaling up SSC, Hosono, based on Japan's experiences, suggests three arrangements.[10] They are: centers of excellence or COEs, partnership programs, and regional mechanisms (Hosono, op.cit. See also Chapter 3 of this volume). With this in mind, we will look at how such arrangements and others support effective knowledge creation by (1) having a knowledge base, (2) providing continuous support, (3) creating space or "Ba" for mutual learning, and (4) making individual "encounters" occur.

Having a Knowledge Base

As stated above, the importance of having a center of excellence (COE) as the core organization in SSC has been emphasized.[11] COE's advantages are manifold, but the most important is the basic body of

[10] Hosono, op. cit.

[11] The recognition of the importance in having Centers of Excellence is not new. The United Nations, for example, highlighted their importance in its 2010 Nairobi Outcome Document, and encouraged its specialized organizations to assist developing countries in enhancing or establishing centers of excellence in their respective areas of competence.

knowledge and skills that they provide to its SSC partners. Landmark examples of COEs, to name a few, are Mexico's Disaster Prevention Center (CENAPRED), Brazilian the Agricultural Research Corp (EMBRAPA), and Singapore's Standards, Productivity and Innovation Board (SPRING).[12] Japan has been involved in the capacity development of all these organizations.

Mexico's CENAPRED is an organization that supported El Salvador in the above mentioned project. Since its foundation in 1988, CENAPRED has developed its technological capabilities, including the knowledge on the seismic behavior of the frames used in local housing. Referring to these technologies, El Salvador was able to develop the earthquake-resistant housing models suited to their local contexts.

Brazil's EMBRAPA, founded in 1973, succeeded in developing new varieties of soybeans for the Brazilian savannah, and that technology along with other technological and institutional innovations is being extended to Mozambique (See Chapter 3 of this volume).

Singapore's SPRING developed various techniques for productivity, and quality management, and these bodies of knowledge are widely shared with interested developing countries, both what they created with Japan and on their own.[13]

Providing Continuous Support

These COEs have one thing in common, and that is they have accumulated and created, through years of effort, a solid knowledge base on issues in their specialized fields. Their very experience of obtaining and creating knowledge constitutes their primary competence, with which they can extend support to southern partners.

Another advantage of having such COEs is that their established organizations and policies, as well as their relatively abundant technical and financial resources enable them to implement long term, consistent and comprehensive support to their partners.

Creating Space or "Ba" for Mutual Learning

In order for an effective creation of knowledge to take place, there must

[12] Part of the following descriptions on the COEs are based on Hosono (forthcoming).

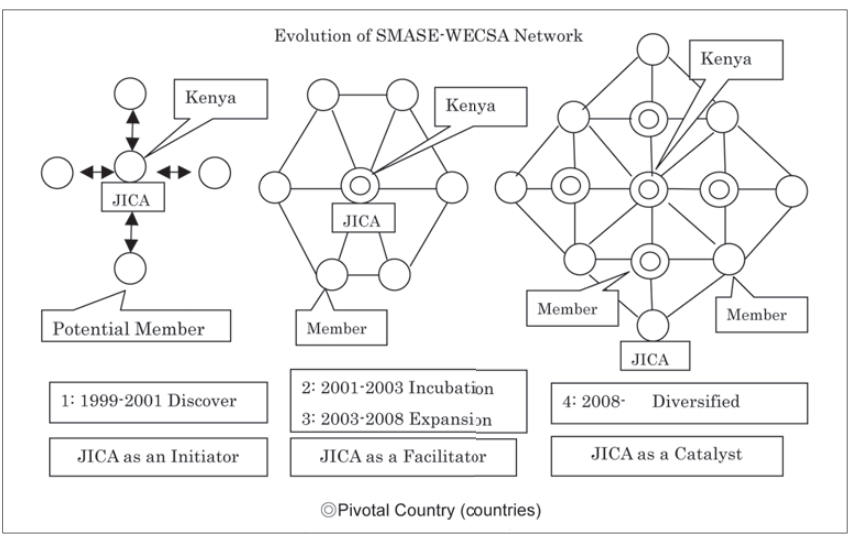
[13] See, for example, Ohno 2010.

be a space where different actors can interact and learn from one another. The Japanese management scientist Ikujiro Nonaka's concept of "Ba" (space) (Nonaka and Konno 1998) explains this experience of ours quite well. According to them, Ba is a context which harbors meaning and can be considered as a shared space that serves as a foundation for knowledge creation. Ba can be physical, virtual, mental, etc. Ba provides a platform for advancing individual and/or collective knowledge. Our experience tells us projects that succeeded in creating such Ba tend to be successful and self-sustaining.

Such space or "Ba" in SSCs can be developed and scaled up through a variety of paths; SSC can start small and expand gradually, or alternatively, start with a fairly solid institution from its initial stage.

Case 3: Mathematics and Science Education in Africa

Our project on mathematics and science education projects in Africa provides an interesting case of network development. Entitled SMASE-WECSA (Strengthening of Mathematics and Science Education – Western, Easter, Central, and Southern Africa), it is a network project serving as a platform under which "mathematics and science educators across Africa can gain practical wisdom via the exchange of each country's experiences and knowledge in the field."[14] The network



Source:Ishihara (2012)

[14] For a detailed description, please see Case 1 of this booklet.

started in 2001 having Kenya as the pivotal country, in which a cooperation project on math and science education with Japan had continued since 1995. Since its establishment and going through the "discovery," "incubation," "Expansion," and "diversified" stages, the project "has been gradually moving towards more diversified relations among the member countries." (Ishihara, op.cit.)

Case 4: "School for All" Project

A similar pattern of gradual evolution of networks can be observed in West Africa's primary education development. A primary education development project based on the "school based management" has been conducted in Niger since 2004 supported by Japan.[15] The project, commonly called the "School for All" project, has turned out to be quite successful: the country established a network of school management committees, contributing to the improvement of primary school education in the country, one of the world's poorest. This positive outcome encouraged decision makers in three neighboring west-African francophone countries - Senegal, Burkina Faso, and Mali to do likewise and currently, primary education projects employing the same concepts exist. Officers and project members of the four countries hold regular meetings – once a year – to exchange information, and learn from one another, thus **developing** a network of mutual learning.

Case 5: Coalition for African Rice Development

Another possibility is to start from the beginning, networking with careful planning and negotiations/coordination among interested parties. One such example is a process through which an initiative called the "Coalition for African Rice Development," or CARD, was initiated and developed. Launched on the occasion of the 2008 Fourth Tokyo International Conference on African Development (TICAD IV), CARD is an initiative "to support the efforts of African countries to increase rice production."[16] It also forms a consultative group of donors, research institutions and other relevant organizations to work with rice producing African countries. Unlike the previous two examples, this initiative has had strong administrative institutions from its early stages, comprised of the General Meeting, the Steering Committee, and the Secretariat, with the participation of major organizations such as AGRA, NEPAD, FAO, IFAD,

[15] For more details, see, for example, http://www.jica.go.jp/english/our_work/thematic_issues/education/study.html.

[16] This part relies on JICA 2009.

CGIAR, WFP, WARDA, IRRI, JIRCAS, as well as JICA.

Making Fortuitous "Encounters" Intentionally

Matching the demand and supply of required knowledge and skills is an age-old challenge for any form of international cooperation, not unique to SSC. However, given the large and increasing number of cooperation providers in the south, this challenge is likely to become more serious over time.

One oft-mentioned approach for effective matching is to take advantage of regional mechanisms (See, for example, Hosono, op. cit.), whose significance has been proven. Our experience' tells us that having schemes like Japan's partnership programs (as discussed in Chapter 3 of this booklet) is also useful. In addition to these, there seems to be several ways to reduce such transaction costs.

First, transaction costs for supply-demand matching can perhaps be reduced if the demand for a certain body of knowledge leads to a natural selection of potential partners of knowledge creation. For example, in our case of El Salvador-Mexico-Japan collaboration, the choice of Mexico as a partner was a natural selection for El Salvador, given the former's abundant and advanced knowledge on anti-earthquake housing technologies, not to mention its geographical proximity and linguistic commonality. Another example is the choice of Brazil as a partner in an agricultural development project in Mozambique, given Brazil's comparative advantage in tropical agriculture along with the two countries' closeness as Lusophone countries.

And ***second,*** external players, both multilateral and bilateral, can act as an intermediary or a broker in matching the demand and supply of required knowledge. This function can be of vital importance, for oftentimes potential partners are not led automatically by an invisible hand to encounter their ideal partners. Here the roles of multilateral organizations with their vast network and convening power cannot be over emphasized. However, bilateral donors, too, can play a role. For example, in the above two cases, Japan facilitated the inception of the projects by acting as an intermediary, connecting the pivotal and beneficiary countries – Mexico and El Salvador, and Brazil and Mozambique. In both cases Japan facilitated the initial project formation process – which usually requires much coordination - by participating in

the joint preparatory study missions. There are other cases where a Japanese expert working in Cambodia worked as an intermediary to link with Brazil to stimulate knowledge exchange, though at a smaller scale. It enabled the meeting of professionals in maternal and child health of the two countries, which otherwise would not have been possible. This interaction between the professionals of the two countries resulted in positive learning experiences.

4. National Level Capacity Development for Scaling Up SSC

So far, we have considered *project level* factors that increase the probability of effective scaling up of SSC. Turning our attention now to the national level, we will have a look at the issue of medium- and long-term capacity development of countries as providers of cooperation. Of late, a lot of attention is being given to the SSCs, but most of the attention seems to have been paid by a handful of dynamically emerging economies, like Brazil, China, India, Mexico, and South-Africa. However, SSC is not to be monopolized by several countries but must and can in principle be provided by any country. Such capacity development is a complex process, requiring a long time as well as a careful and strategic approach. Let us first have a look at the case of Indonesia, and see how this country with an outstanding history of SSC is now trying to streamline its SSC activities.

Case 6: Systematic Capacity Development for SSC in Indonesia

Indonesia prides itself in having a long history of SSC, starting from the days of the well-known Asian-African Conference held in 1955, to promote Asia-African cooperation. Ever since then, Indonesia has conducted a number of SSC activities, accumulating a huge body of expertise. Even with such a long history and abundant experience, however, putting the international cooperation policy in the mainstream policy framework was not an easy task. Quite wisely, Indonesia has been taking a step-by-step approach in developing its capacity as an international cooperation provider, clarifying the specific tasks that have to be tackled in a carefully planned sequence.

Since 1981, in line with the Buenos Aires Plan of Action (BAPA) which underpinned the importance of technical cooperation among developing countries, the Government of Indonesia (GOI) has been implementing various technical cooperation activities in the Indonesian Technical Cooperation Program. However, the successive structural

changes of the government over time have made the GOI mechanism for SSC complicated, which came to be viewed as hampering effective coordination in implementing SSC. This recognition prompted GOI to formulate policy frameworks and restructure their complex implementation and funding mechanisms toward more effective SSC. This imperative was furthered by the international environment and national factors such as international initiatives on aid effectiveness (the Paris Declaration and the Accra Action Agenda), the inclusion of Indonesia in the Group 20, and the signing of the Jakarta Commitment and the inclusion of SSC into the National Medium Term Development Plan.

Since the late 2000s, GOI has been conducting a series of dialogues on the future direction of their SSC with various national and international stakeholders and supporters on various occasions. These dialogues culminated in the Grand Design 2011-2025 and the Blue Print 2011-2014, a policy framework of Indonesia's SSC and triangular cooperation. In preparing these documents, several donors including the UNDP, the World Bank and JICA provided support. These documents are now in the process of receiving approval.

Within the framework of the national Long-Term Development Plan (RPJPN) 2005-2025, the targets and time frame of the Grand Design are phased into three periods: Period I (2011-2014) is for the consolidation of Indonesia's SSC, mainly by legal framework development and institutional coordination strengthening; Period II (2015-2019) is for enhancing the involvement of all stakeholders, including the private sector, NGOs and universities; and Period III (2020-2025) is for furthering the SSC.

Simultaneously, they worked to revitalize the implementing mechanism of Indonesia's SSC. An important event in this context was the organization of a national seminar in 2010, at which the draft of the Grand Design and the Blue Print were widely shared among diverse interested parties, from line ministries to international donors and to NGOs. This seminar resulted in the establishment of the Coordination Team on South-South and Triangular Cooperation in 2010, mandated, as a coordinating body across line ministries, to promote and develop Indonesia's strategic SSC cooperation. Through these steps, GOI's governance structure of SSC has come to be consolidated and streamlined.

The GOI's on-going efforts and the progress of SSC capacity development have demonstrated the importance of fostering a common vision for the strategic national direction toward effective SSC and triangular cooperation among a broad range of stakeholders. This policy framework also served as a guide for external supporters including JICA in extending support to GOI in their efforts for effective SSC.

What is notable in GOI's efforts in strengthening capabilities for SSC is their approach to emphasize a balance between policy/institutional framework and its operationalization. For instance, under its policy framework, the GOI is now supporting the development of the road sector in Timor-Leste by providing training and workshops in collaboration with external supporters including JICA. The outcome of the project, in turn, is immediately provided as feedback to the policy framework for its further refinement. This integration of policy and operation has provided a process and space for learning, and has been the key in building up the GOI's capacity for SSC.

Start Small

The above mentioned Indonesian case is an example of capacity development of a large-scale country, and is not easily replicable by other, especially smaller, countries. There are ways, however, that smaller countries or small organizations with fewer resources can, just as well, participate in the mutual learning and joint solution search exercises. In the case of the Better Hospital Service Program, one of the initial pilot hospitals that introduced 5S-KAIZEN-TQM in Tanzania – namely Mbeya Referral Hospital - developed its capacity so that it could organize a training course geared to the peer practitioners from other African countries. In case of the El Salvador seismic-resistant housing project, experts on adobe housing were invited from Peru to provide assistance. Toward the later years of the project, Salvadoran participating universities developed their capacity and motivation to such an extent that they started exchange programs with some universities in Central American countries.

Capacity Development of COEs

The preceding discussion reminds us that actually every one of today's powerful cooperation providers started small. Some of the organizations we mentioned earlier as "centers of excellence such as EMBRAPA, CENAPRED, SPRING, too, all started small, often by organizing small

training programs. By steadily repeating such activities and accumulating experiences, they gradually developed their capabilities. Japan, too, started small, in 1954, with very modest training programs and dispatches of small numbers of experts.

Another point worthy of our attention is that COE's usually don't simply grow on their own; these COEs are usually established to serve their own countries and are not for the purpose of international cooperation. With such organizational mandates, their drive toward international cooperation might wither if not warranted by clear organizational visions and government orientations. It is partly in this context that Hosono (op. cit.) emphasizes the significance of "partnership programs," a framework that Japan has been developing with 12 partner countries since 1994. The partnership programs' regular planning and coordination processes enable the partnering countries to work out their cooperation program and accordingly mobilize resources effectively. Such arrangements have made it possible for the governments to pronounce clear messages and predictable plans concerning their SSC, thereby enabling systematic resource mobilization on the part of collaborating agencies.[17]

5. Summary and Concluding Remarks

This chapter started with the discussion of international development cooperation inevitably concerning itself more with mutual learning and joint solution discovery, and to that end, current SSC and TrC must be scaled up. Viewing SSC essentially as a process of joint knowledge creation, and paying particular attention to institutional arrangements and capacity development aspects, we have looked at some factors that can contribute to scaling up of SSC.

We argued that SSCs can particularly be effective when they deal with the right kind of knowledge that is unavailable elsewhere and strongly needed by the beneficiaries. We then argued the importance of having a knowledge base and continuous support, for both of which, we argued, having COEs could be instrumental. We emphasized the importance of encouraging an interactive knowledge creation process, for which, we argued, there are a variety of possible approaches. Finally, we looked into the process of capacity development to become cooperation providers. Since the process will inevitably be a time-consuming

[17] The partnership also alleviates the financial burdens of partners, with its cost-sharing arrangements with Japan.

exercise, consistent and continuous support from the international community is called for.

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PART II

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Case 1

Network-Type Cooperation: Strengthening of Mathematics and Science Education in Western, Eastern, Central, and Southern Africa (SMASE-WECSA) Network

Shinichi Ishihara

1. Introduction

This paper focuses on network-type cooperation of mathematics and science educators across the African continent which share and create practical wisdom in the two main thematic areas, namely, establishing sustainable In-service Training (INSET) systems and enhancing classroom practices. JICA's Operation in Education Sector Paper (2010) states that JICA will further promote network-type cooperation, in which Japan can serve as a facilitator in utilizing different countries experiences, knowledge and outputs to solve common problems that the countries and regions are facing. In this context, JICA is hopeful that the Strengthening of Mathematics and Science Education in Western, Eastern, Central, and Southern Africa (SMASE-WECSA) will create a platform where countries can share their experiences in, and knowledge of, mathematics and science education (JICA, 2010). Within the SMASE-WECSA network, Kenya has served as a pivotal country of the African region with its leading role in sharing its practical wisdom with mathematics and science educators and for expanding cooperation in that area. However, with active participation of an increasing member of countries having various interests, the SMASE-WECSA network has been gradually moving towards one with more diversified relationships among the member countries.

The following sections will examine the development of SMASE-WECSA network and the process of sharing and creation of practical wisdom through the network-type cooperation, and draws implications of the case. The findings of this study are based on a review of relevant documents, interviews with persons who are involved in the network and the author's

personal experience[1] with the SMASE-WECSA network.

2. Overview and Background of the SMASE-WECSA Network

2-1 Overview of the SMASE-WECSA Network

SMASE-WECSA, an acronym for Strengthening of Mathematics and Science Education - Western, Eastern, Central, and Southern Africa, was born out of regional conference attended by mathematics and science educators of 11 original member countries[2] held in Kenya in early 2001. It was made possible by the initiative of Strengthening of Mathematics and Science in Secondary Education (SMASSE) Kenya project (hereafter referred to as SMASSE Kenya) (SMASE-WECSA, 2010a). Originally the network was named Strengthening of Mathematics and Science in Secondary Education (SAMSSE)-Eastern, Central, and Southern Africa (ECSA); however, the term Western was added to reflect the participation of Ghana that represented West Africa in 2002. This led to a change name from SMASE-ECSA to SMASSE-WECSA. The term Secondary was removed to broaden both primary and secondary education in 2006. Consequently, it thus became the current network name of SMASE-WECSA (hereafter referred to as SMASE-WECSA) in 2006 (SMASE-Africa, 2012).

The SMASE-WECSA network is a platform under which mathematics and science educators across Africa can share and create practical wisdom through the exchange of each country's experiences and knowledge in mathematics and science education. In this paper, practical wisdom is defined as experiences and knowledge to solve common challenges/ problems that the SMASE-WECSA member countries face. There are the two major common challenges: establishing sustainable In-service Training (INSET) systems and enhancing classroom practices.

As of March 2012, as shown in Table 1 and Figure 1, there were 26 member countries plus 1 region[3] and 8 observer countries, for a total of

[1] As a member of Human Development Department, JICA (2005 to 2010), the author served in conducting project design study on SMASE-WESCA related projects in 11 countries. However, the views expressed herein belong solely to the author and do not necessarily reflect the official views of JICA.

[2] Kenya, Lesotho, Malawi, Mozambique, Rwanda, Swaziland, South Africa, Tanzania, Uganda, Zambia and Zimbabwe

[3] The region refers to Zanzibar (Tanzania). The Zanzibar Ministry of Education is a separate entity from the Tanzania Ministry of Education; therefore, each is registered separately in the network.

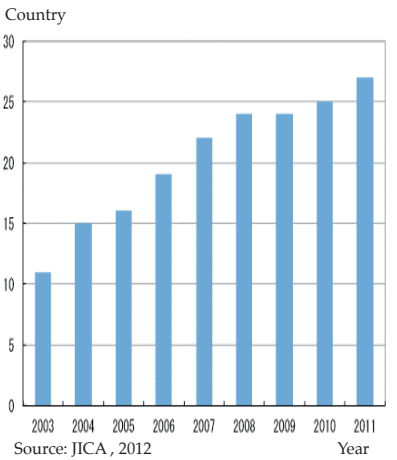
34 countries and 1 region (JICA, 2012). Among the 54 African countries (Member States of the United Nation), approximately 60% of the countries have been involved in the network. Each country throughout Africa, which submits an application through the appropriate ministry that oversees mathematics and science education and pays the registration fees and annual membership dues[4], is eligible to be a member of the SMASE-WECSA network (SMASSE INSET Unit, 2002).

Table 1: List of Member Countries • Year of Membership

Year	Country
2003	Ghana, Kenya, Lesotho, Malawi, Mozambique, Rwanda, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe
2004	Botswana, Burundi, Niger, Nigeria
2005	Senegal
2006	Cameroon, Ethiopia, Sierra Leone
2007	Burkina Faso, Gambia, Zanzibar
2008	Angola, Southern Sudan
2010	Mali
2011	Benin, Namibia

Observers: Republic of the Congo, Cote d'Ivoire, Egypt, Madagascar, Mauritius, Seychelles, South Africa, Sudan
Source: JICA , 2012

Figure 1: Change in Member Countries

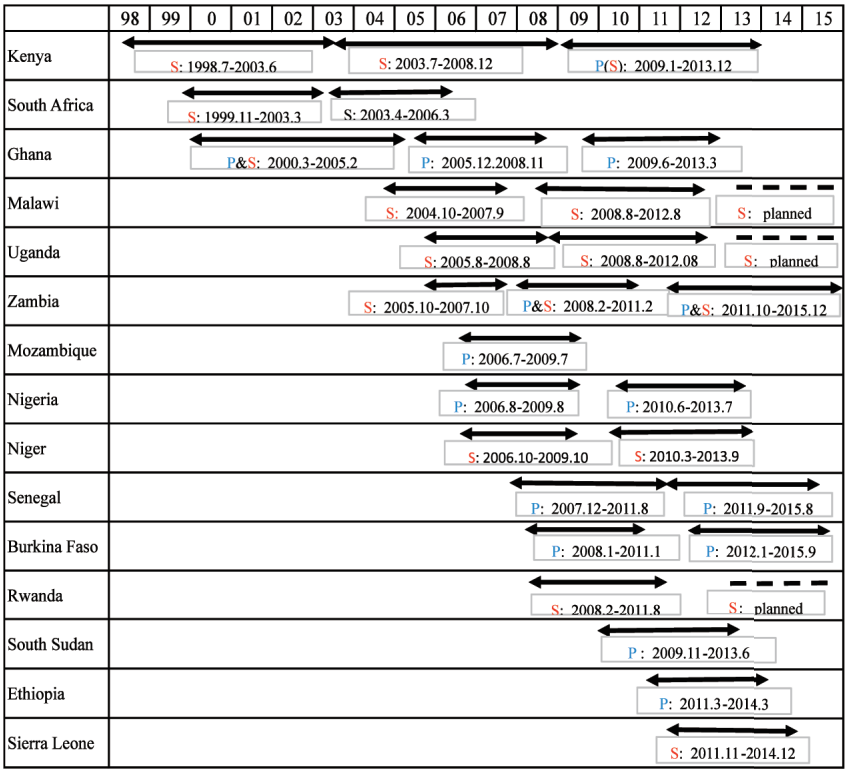


Source: JICA , 2012

JICA has expanded mathematics and science education cooperation in Africa through the interactive learning activities of the SMASE-WECSA network with Kenya serving as a pivotal country for the regional activities. As is noted in Figure 2, since the establishment of the SMASE-WECSA network in 2001, SMASE-WECSA related projects in mathematics and science education have been launched in 12 countries, starting from Malawi. After the mission of SMASE-WECSA was revised to broaden mathematics and science education at the basic level including the primary level in 2006, the projects have been expanded to primary mathematics and science education. In addition, the projects have spread out across Francophone (Niger, Senegal and Burkina Faso) and Lusophone (Mozambique) countries besides Anglophone countries in Africa. Furthermore, the projects have also extended to the post-conflict countries (South Sudan, Sierra Leone).

[4] Registration Fee $100 (USD), Annual Subscription Fee $300 (USD)

Figure 2: SMASE-WECSA Related Projects



P= Primary, S=Secondary

Source: Composed from JICA's Knowledge Site, information based on interviews with JICA

2-2 Challenges of Mathematics and Science Education among the Member Countries

Based on the JICA reports on mathematics and science education projects within the SMASE-WECSA network, the following main challenges had been pointed out:

(1) Mathematics and science education as the basis for promoting science and technology

As many African countries are looking toward economic development and industrialization, there is an urgent need to develop human resources that promote science and technology. At the core of the promotion of science and technology is the need to emphasize the importance of mathematics and science education with the expectation that students will be nurtured to think critically in the sciences.

However, many African countries face the challenge of poor performance in mathematics and science education.

(2) Inadequate teaching skills

It has been pointed out that one of the common causes of poor performance in mathematics and science education is teachers' inadequate teaching skills. Although policies in many countries were advocating for a student-centered approach, the reality was that classes were mostly based on the teacher-centered lecture style model. Furthermore, there was no system in place to continuously provide teachers with INSET to improve their teaching skills during the course of their careers. Another challenge was related to the sustainability of INSET; it was often difficult to continue INSET activities once external support from aid agencies/organizations was withdrawn.

3. Evolution of SMASE-WECSA Network

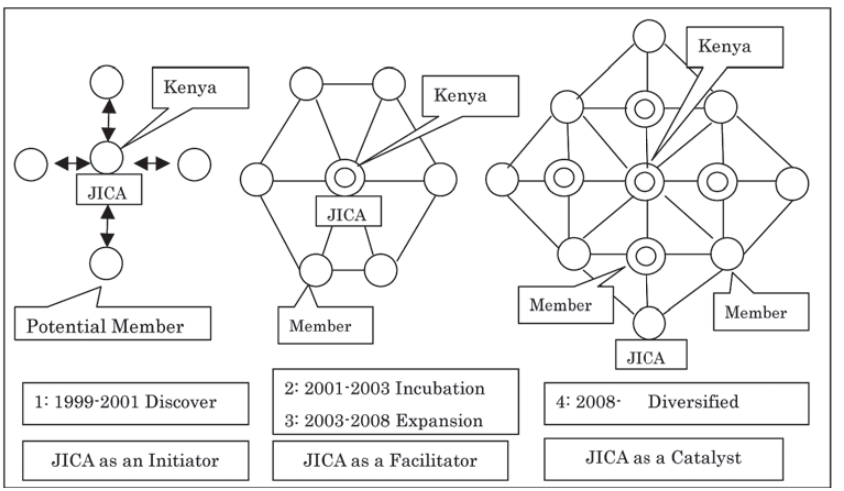
How has the SMASE-WECSA network been evolving? The concept of communities of practice (Wenger et al, 2002) is useful for the analysis of the evolution of network. Wenger et al. (2002) defines communities of practices as groups of people who share a concern, a set of problems, or passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis. They have contended that, like other living things, communities are not born in their final state, but go through a natural cycle of birth, growth, and death. They have observed five stages of community development: potential, coalescing, maturing, stewardship, and transformation. They have argued, as communities evolve through stages, the activities needed to develop them also change.

A useful reference in analyzing the SMASE-WECSA is the case of Southern and Eastern Africa Consortium for Monitoring Education Quality (SACMEQ). SAQMEC is an international non-profit developmental organization of 15 Ministries of Education in Southern and Eastern Africa which decided, with technical assistance from UNESCO International Institute for Educational Planning (IIEP), to work together to share experiences and expertise in developing the capacities of education planners to apply scientific methods to monitor and evaluate the conditions of schooling and the quality of education. The evolution of SACMEQ from an experimental project to an independent organization over 20 years is divided into four phases:

innovation, collaboration, consolidation and launch. The role and position of IIEP is described at each phase: initiator, facilitator, external friend and one of several external friends (SACMEQ 2012).

Using the above-mentioned concept and case as references, the author examines the evolution of the SMASE-WECSA network by dividing it into four stages (see Figure 3).

Figure 3: Evolution of SMASE-WECSA Network



Source: Created by the Author ◎ Pivotal Country

3-1 Stage 1: Discovery 1999 - 2000

The origin of the SMASE-WECSA network can be traced back to an exchange visit to Uganda by SMASSE Kenya in January 1999, which was organized by SMASSE Kenya to learn lessons on sustainable issues from a similar project funded by other aid agencies (JICA, 2007a). From the late 1990s through the early 2000s, mathematics and science education projects had begun in Ghana and South Africa supported by JICA, and JICA experts were dispatched to Malawi and Zambia to explore possible education projects in each country. This marked the start of the informal exchange of ideas among various countries' mathematics and science educators and JICA experts. During this period, technical exchange visits were mostly initiated by SMASSE Kenya, either SMASSE Kenya's visit to other countries (Uganda, Tanzania, Malawi, Zambia and South Africa) or visits to SMASSE Kenya by other countries (Tanzania, Malawi, Zambia and South Africa). Through such informal technical exchange

visits, they discovered common challenges such as the problem of INSET sustainability after the withdrawal of external support, and persistent criticisms against INSET as being too academic or impractical. The members of SMASSE Kenya, both Kenyan and Japanese, realized that SMASSE Kenya acquired a lot of experience related to the problems facing secondary level mathematics and science education and possible interventions. By that time, SMASSE Kenya had made some headway towards enhancing the quality of mathematics and science in the classroom by developing an approach called ASEI-PDSI, or the "Activity, Student, Experiment, Improvisation / Plan, Do, See, Improvement"[5] Approach (SMASSE INSET Unit, 2001). Thus, by promoting various exchanges, SMASSE Kenya took an initiative to plan a regional conference as an initiator where participating countries could discuss common challenges and build up a network.

3-2 Stage 2: Incubation 2001- 2003

In establishing the SMASE-WECSA network, who were the participating members and what was the central focus of the discussions? At the 2001 and 2002 regional conferences, there was a wide range of participants involved in secondary mathematics and science education such as education administrators at both central and regional levels; teachers and head teachers of secondary schools; tutors of teacher's colleges; university lecturers; inspectors or educational methods advisors; and teacher trainers. The two main focal points from the first two regional conferences centered on establishing sustainable In-service Training (INSET) systems and enhancing classroom practices (SMASSE INSET Unit, 2001 & 2002, SMASE-WECSA, 2010a).

Because the participants were actual educators directly connected to classroom activities at the school level, their critical area of focus turned to the issue of classroom practices. Moreover, discussions also focused on the necessity of gaining support from school administrators for enhancing classroom practices. In the 2001 Kenya Regional Conference,

[5] The philosophy of the ASEI-PDSI approach was born from discussions between the SMASSE Kenya counterpart and Japanese experts. ASEI aims at assisting teachers to shift classroom practice from: Content based to **Activity** based; Teacher-Centered to **Student-Centered;** Lecture methods/theoretical approach to **Experiments** and research based approach; Recipe type large scale experiments to Scaled-down experiments and use of **Improvisation**. PDSI on the other hand, emphasizes careful **Planning** before going to teach, **Doing** the actual teaching, Seeing where the planning is weak so as to **Improve** on future lessons (JICA, 2007a, SMASE-WECSA, 2010a).

where 44 participants representing 11 countries[6] were in attendance, the importance of exchanging the practical wisdom of each country's mathematics and science education was recognized, and it was decided to form a network for the purpose of developing improvements for African mathematics and science education. With 37 participants representing 13 countries[7] in attendance for the 2002 Kenya Regional Conference, the constitution for SMASSE-WECSA Association was ratified. In 2003 the regional association was registered as SMASSE-WECSA association in Kenya, which became independent from SMASSE Kenya. However, the secretariat was located in SMASSE Kenya and the Chairperson and all secretariat members were selected from SMASSE Kenya (SMASSE INSET Unit, 2002, SMASE-WECSA, 2010a). JICA has started supporting SMASE-WESCA member countries through the SMASE-WECSA network[8] as a regional cooperation component of the SMASSE Kenya Phase 2 project since July 2003. Thus, SMASSE Kenya became the hub of the network-type cooperation.

3-3 Stage 3: Expansion 2003 - 2008

(1) Exchange with other networks & agencies

After the establishment of network-type cooperation in 2003, the SMASE-WECSA network actively started building collaboration with various networks and agencies. SMASSE Kenya played a pivotal role in building exchanges with other networks and agencies. Among the various networks, the SMASE-WECSA network developed a strong relationship with the Association for the Development of Education in Africa (ADEA)[9]. The 2002 Basic Education for Growth Initiative (BEGIN), which is a basic education cooperation policy of Japan, announced that Japan would participate in ADEA and support a creation of a working group on mathematics and science education. This led to the 2004 step in which, JICA became an ADEA member. Following this, the Working Group on Mathematics and Science Education (WGMSE) was launched in March 2005. The SMASE-WECSA

[6] Kenya, Uganda, Tanzania, Zanzibar, Zambia, Malawi, South Africa, Swaziland, Lesotho, Mozambique, Zimbabwe, Rwanda. Including the secretariat and Observers, a total of 73 participants from12 Countries (including Japan) participated (SMASSE INSET Unit, 2001)

[7] In addition to the 11 countries which participated in the first conference, Ghana and Burundi attended. Including the secretariat and observers, a total of 68 participants from 15 countries participated. The observing countries were Japan and the Philippines.

[8] During SMASSE Kenya Phase 2, Kenya Internal Component and the Regional Cooperative Component were formed as two entities.

[9] Network developed for the purpose of exchanging policy dialogue and information regarding education in Africa, comprised of policymakers, practitioners, researchers, development agencies, private sector, NGO

association became a basis of networking of WGMSE (SMASE-WECSA, 2010a). Based on this, the activities of SMASE-WECSA gained a greater foothold in contributing to the development of African education, specifically in the area of mathematics and science education. However, JICA was not able to provide financial support to the WGMSE through ADEA due to administrative constraints. Thus, JICA has supported WGMSE activities through the SMASE-WECSA network as a regional cooperation component of the SMASSE Kenya. Consequently, the activities of the SMASE-WECSA network and the WGMSE are two side of the same coin.

During this period, efforts seeking relationships with institutions in Asia were activated to explore possible collaboration: SMASSE Kenya visited, in November 2003, UP NISMED or the National Institute for Science and Mathematics Education Development, University of the Philippines, and in July 2005, SEAMEO or the Southeast Asian Ministers of Education Organization – the Regional Centre for Education in Science and Mathematics (RECSAM), Malaysia.

In addition to these networks, SMASSE Kenya has built networks with the Secondary Education in Africa (SEIA) Program under the World Bank Initiative since 2003, the New Partnership for Africa's Development (NEPAD) since 2004 and SACMEQ since 2005(SMASE-WECSA, 2010a, Bregman et al, 2004).

(2) Regional conference

As shown in Table 2, Regional Conferences were hosted by the different member countries from 2003 to 2007. During this period, the primary focus of the conferences was the enhancement of classroom activities, specifically focusing on developing a practical program to address this issue. For example, classroom demonstrations were conducted by the participants at local schools, and a students' perspectives forum was organized to enable educators to hear students' perspectives on mathematics and science. Being exposed to such practical and experiential type programs, participants were able to gain practical and technical knowledge and skills. In particular, for the 2007 Regional Conference held in Zambia, Zambia's lesson study approach and activities[10] attracted participant interests from each country. This, in turn,

[10] Lesson study refers to a methodology involving the principle of Plan-Do-See for improving classroom lessons through peer collaboration, which is to focus exclusively on the lessons themselves (JICA, 2007b).

led to the initiative of some countries attempting to adopt lesson study approach and activities in their countries.

Since the 2004 South Africa Regional Conference, in addition to participants from the SMASE-WECSA member countries, a number of JICA experts and staff of JICA offices participated as observers in the conference, which helped to build a network through joint learning. Consequently this led to expanded cooperation in mathematics and science education. In addition to the establishment of the ADEA Working Group on Mathematics and Science Education (WGMSE) in March 2005, the Steering Committee Meeting of ADEA-WGMSE has been organized during the timing of SMASE-WECSA Regional Conference since 2005. Consequently, the number of participants from ADEA, International Organizations, and institutions in Asia increased.

The SMASE-WECSA network initially targeted secondary mathematics and science education. However, as member countries increased, it became apparent that several of the member countries had their priorities on primary education. As a result, the charter of the SMASE-WECSA association needed to be revised to cover both primary and secondary mathematics and science education. The primary education factor necessitated a change in name of the network, from SMASSE-WECSA to SMASE-WECSA. This revision and change was adopted during the 2006 Regional Conference in Senegal (SMASE-Africa, 2012).

Furthermore, a secretariat administration was changed to multilingual representatives from all the languages of the region; a Chairperson from Zambia (Anglophone country), one Vice-Chairperson from Senegal (Francophone country), and another Vice-Chairperson from Mozambique (Lusophone country).

Table 2: Regional Conference 2003 - 2007

Year	Host Country	Main Theme (Keyword)	No. of WECSA Countries	No. of Participants (incl. observers)
2003	Ghana	Enhancing Classroom Activities	18	90
2004	South Africa		21	111
2005	Rwanda		27	133
2006	Senegal		27	93
2007	Zambia		23	167

Source: Composed from SMASE-WECSA, 2010b, JICA, 2011

(3) Expansion of activities of network-type cooperation

Training programs which constituted the core of network-type cooperation started in January 2004 in Kenya, by using a program called Third Country Training Programme (TCTP). Since then, they have been taking place every year. The training was led by the Centre for Mathematics, Science, and Technology Education in Africa (CEMASTEA), a counterpart organization of SMASSE Kenya, for key trainers from the SMASE-WECSA member countries, with the support of the Government of Kenya and JICA. The training programs, though centered on practical teaching approaches, included training in such key areas as sustainability, relevance, impact, efficiency and the effectiveness of INSET systems. Moreover, to better meet the needs of each member country, in addition to the regular TCTP, CEMASTEA has been conducting Special Training Courses for SMASE-WECSA member countries course since 2005. Technical Assistance services have also been provided by CEMASTEA (SMASE Kenya) staffs and JICA (Japanese) experts to SMASE-WECSA member countries from 2005(SMASE-WECSA, 2010a and 2010b). Since 2006, CEMASTEA has been offering TCTP at the primary level as well as at the secondary level and also for Francophone countries. In Asia, the Regional Centre for Education in Science and Mathematics (RECSAM) in Malaysia conducted a customized course for Kenya in 2006, for Uganda in 2007, and eventually expanding to cover seven member countries in 2008.

Through such activities of network-type cooperation, as illustrated in Figure 2, the related projects extended to 9 countries within the SMASE-WECSA network. With this expansion, SMASSE Kenya played a significant role within the network-type cooperation. It is thought that JICA served as a facilitator in expanding mathematics and science education projects for member countries in collaboration with SMASE Kenya through the network-type cooperation.

3-4 Stage 4: Diversified from 2008

From 2008, the Regional Conferences continued to be held in Kenya. The focus of the conferences has shifted from practical aspects of classroom activities to the organizational structure and way forward of the SMASE-WECSA network. Practical programs such as class demonstrations and students' perspectives forums were discontinued. As the number of member countries increased, it became more difficult to deal with the various and specific issues raised by the participants. Owing to the

Table 3: Regional Conference 2008 - 2011

Year	Host Country	Main Theme (Keyword)	No. of WECSA Countries	No. of Participants (incl. observers)
2008	Kenya	Sustainable SMASE-WECSA Association	21	96
2009		Sustainable INSET activities	20	68
2010		A Reflection on a Decade	26	108
2011		The Way Forward of SMASE-WECSA	26	75

Source: Composed from SMASE-WECSA 2010b, JICA, 2011

network's reliance on JICA's support, another concern that emerged was how the network could continue activities once JICA's support becomes unavailable. Thus the focus of attention began shifting toward the future sustainability of the network.

On the other hand, as the practical wisdom in science and education came to be built up not only in Kenya but also in other countries, those countries began exchanges among themselves. Specifically, in October 2008, a technical exchange visit between the Zambia Project and the Uganda Project was conducted, prompted by the two countries' mutual interest. Uganda, like Kenya, had taken a cascade approach to roll out INSET nationwide; however they had faced challenges regarding how to secure that teachers actually apply teaching approaches they had learned in training. Therefore, Uganda became interested in Zambia's school based training approach and experiences gained through lesson study; on the other hand, Zambia was interested in Ugandan experiences and how Uganda applied the SMASE Kenya approach in their own context. Encouraged by these exchanges, a series of regional technical workshops for lesson improvement were organized three times (in 2009, 2010, and 2012) through the initiative of Uganda and once (in 2010) through the initiative of Zambia.

Around the same time in 2008, as Swaziland was also interested in Zambian lesson study, Zambia was approached by Swaziland and the idea on technical workshops was discussed. Based on these ideas, at the November 2008 SMASE-WECSA Steering Committee meeting, it was proposed to introduce a more diversified menu of SMASE-WESCA activities that could better address the needs of different countries according to their interests and situations. As an example, technical workshops divided by language or by specific practical needs were suggested. This led to the first official SMASE-WECSA Technical Workshop in May 2009 in Swaziland, which was attended by 97

participants from 15 different countries including Asia (Malaysia, the Philippines and Japan). The important feature of this workshop is that it was wholly organized and facilitated by Kenyan and Zambian experts based on their own ground experiences in their respective countries (SMASE-WECSA, 2009, Kisaka & Matachi, 2009).

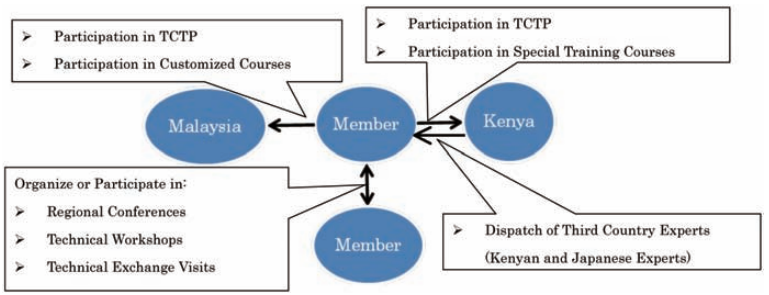
In Asia, the Projects in Uganda (since 2007), Nigeria (since 2008), Zambia (since 2008), and Malawi (since 2009)—without using Kenya as an intermediary—communicated with RECSAM and RECSAM implemented customized courses for these countries. Moreover, beginning in 2008, the TCTP for Secondary Mathematics and Science Teacher Educators targeted 10 SMASE-WECSA member countries under the arrangement of equal cost sharing basis between the Government of Malaysia and JICA.

In this respect, the position and role of Kenya within the network-type cooperation began to shift in such a way that countries other than Kenya, which had accumulated practical wisdom, could also develop plans to share their knowledge and experiences with other countries. In other words, Kenya came to be seen as one of pivotal countries, as countries other than Kenya gradually came to assume similar functions. Within this framework, JICA's function switched to that of a catalyst whose role was to discover practical wisdom in each country which could benefit other member countries.

4. Case Analysis: The Sharing and Creation Process of Practical Wisdom

As shown in Figure 4, the SMASE-WECSA network is a platform where mathematics and science educators from the member countries can share and create practical wisdom through a variety of activities. The major characteristics of this network–type cooperation are: Kenya's role as a pivotal country although countries other than Kenya have gradually increased their role; and the exchange activities with the institution in Asia.

Figure 4: Major Activities of Network-type Cooperation



Source: Composed from SMASE-WECSA, 2010ab

The record of major activities of network-type cooperation is summarized in Table 4.

Table 4: Record of Major Activities of Network-type Cooperation

Implementer	Activities	Record
CEMASTEA, Kenya	TCTP	1158 participants for 30 countries Year 2004-2011
	Special Training Courses	345 participants for 11 countries Year 2005-2009
	Third Country Experts (Kenyan and Japanese Experts)	216 experts for 15 countries Year 2005-2010
WECSA member countries	Regional Conferences (annually)	1082 participants (incl. observers) Year 2001-2011(11 conferences)
	Technical Workshops	273 for 13 countries Year 2009-2010 (organized by Uganda, Swaziland, Zambia and Botswana)
RECSAM, Malaysia	TCTP	241 for 12 countries Year 2006-2011
	Customized Courses	113 for 9 countries Year 2008-2011

Source: Composed from SMASE-WECSA, 2010b, JICA, 2012, information based on interviews with JICA

Even for member countries with no projects supported by JICA, sharing and creation of practical wisdom was made possible through regional activities such as TCTP. However, one unique feature of the SMASE-WECSA network can be found in the process of project formulation and implementation.

4-1 Process of Sharing and Creation of Practical Wisdom

This section examines how practical wisdom is shared and created through the process of project formulation and implementation. The standardized process is outlined in Figure 5, with the information

regarding each step detailed below:

(1) Interest:
Delegates of mathematics and science educators (education administrators/practitioners) from the member countries participate in a regional conference, and then they become interested in the validity of the ASEI-PDSI approach and INSET systems.

(2) Understanding:
The member countries send mathematics and science educators to TCTP in Kenya. They can then understand the teaching approach and the INSET systems in Kenya.

(3) Ownership:
Mathematics and science educators of who attend regional conference and TCTP in Kenya gained a strong sense of ownership to implement such projects in their own countries, and then lobby the relevant government ministries in their countries on the necessity of INSET for mathematics and science educators. Motivated by such moves, the governments of the member countries decided to submit official project requests to the government of Japan.

(4) Sustainability:
At the project design study stage, the commitments of the necessary personnel and budgets from the member counties are secured in order to continue INSET in a sustainable way.

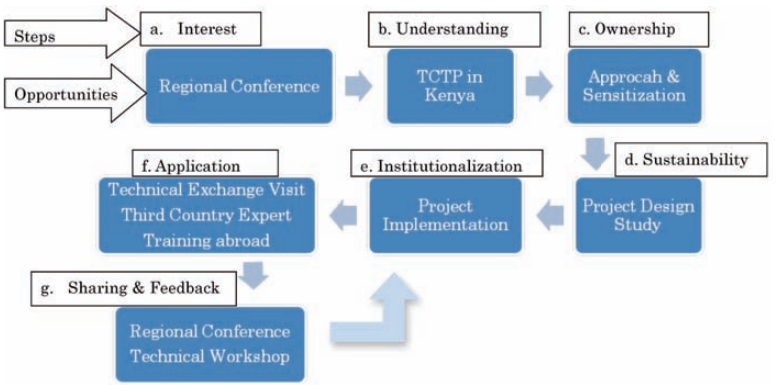
(5) Institutionalization:
At the project implementation stage, the member countries work for establishing continuous INSET systems for enhancing classroom practices in the context of each country.

(6) Application:
When technical support is required for expertise on the development of teaching materials or the need for the establishment of INSET systems is confirmed, it is possible for each member country to find solutions to their challenges through technical exchange visits, third country experts and training programs abroad.

(7) Sharing & Feedback:

Each member country has the opportunity to share its amassed experiences and knowledge, namely, practical wisdom through regional conferences and technical workshops, and then feed them back for the development of teaching approachs and INSET systems of their own countries.

Figure 5: Process of Sharing and Creation of Practical Wisdom



Source: Created by the Author

4-2 Mechanism to Strengthen Ownership

Regional conferences and TCTP in Kenya enabled countries to learn about each other's experience, understand Kenyan initiative, develop a strong willingness to begin a project, and appeal to technical support from Kenya SMASSE and JICA. During the drafting stage of a project request, in the case where member countries request advice from SMASSE Kenya and JICA, they were advised as to what type of their own commitment would be required to start the project. A country's strong willingness to begin a project makes it possible to secure the firm commitment of the necessary budget and human resources. The practical wisdom of SMASSE Kenya which was created as a result of trial and error process helped make members of other projects understand the importance of their commitment. As the project was designed to develop a sense of ownership, JICA was intentionally not used to call this a 'JICA Project'. It was called the member counties' government projects/programs to foster the attitude that JICA is only a supporter of the project and programs.

The philosophy of Mr. Sugiyama,[11] SMASSE Kenya's former Chief Advisor who was involved in establishing the SMASE-WECSA network had a great influence on fostering this type of approach. Sugiyama's philosophy on cooperation for Africa's mathematics and science education can be summarized in his own words (taken from an interview article in Japanese, translated into English):

> "What's important first is that the country needs to have a "can-do" attitude. If a country wants to change the situation, people have to know that it is the country itself that has to take actions and that they can indeed make a change, rather than just accepting things as facts of life. Without this willingness, no external support including that of Japan is meaningless. The people of a country know their own educational system better than anyone—they are the experts. We serve only as a partner to jointly contribute to bringing forth the necessary wisdom for the improvement of education (JICA, 2006)."

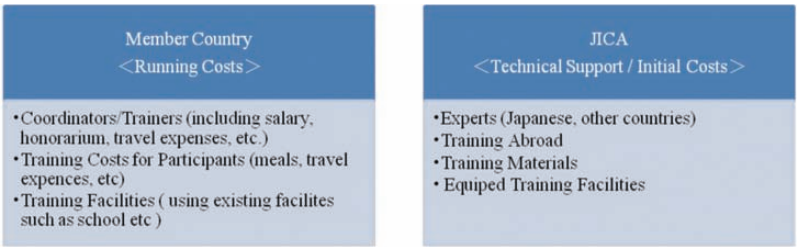
4-3 Principles of Cost Sharing for Sustainability

What kind of measure can be used to establish sustainable INSET systems? As working conditions of teachers in many African countries are inadequate, one of the biggest incentives to get them to participate in trainings or workshops is a daily allowance. Most aid agencies and NGOs have been paying such a daily allowance to teachers who attended INSET; however, when the project finished, what happens in many cases is that INSET gets discontinued. Given this situation, SMASSE Kenya decided that it would, rather than pay a daily allowance, allocate funds to be used as part of tuition to cover the actual training costs (food, transportation, etc.). On the Kenyan side a SMASSE Fund was established as a means of sustaining INSET systems. The idea behind these moves is that since INSET aims to provide teachers with opportunities of continued lifelong learning, the system should be able to extend beyond the end of the project.

Based on this idea, as outlined in Figure 6, the member countries bear the cost of running INSET, while JICA funds the technical support and initial costs.

[11] For about 40 years since he was first appointed to serve in Tanzania in 1969 as a Mathematics and Science Teacher of Japan Overseas Cooperation Volunteers, Sugiyama has been engaged in African education cooperation. He worked as a Senior Advisor in Education of JICA. In 2006, he received the Foreign Minister of Japan Award. He passed away in 2012.

Figure 6: Breakdown of Cost Sharing



Source: Composed from JICA's reports of SMASE-WECSA related Project

The general pattern is that there are two budget reviews; first to confirm that both parties have consented to the general framework of the cost sharing (items based), and second to ensure that there is consent on the detailed budget. This type of specific budget review was started by the project in Uganda in 2005 to ensure that the necessary costs were covered by financial support. The budget review process varies across member countries, however, and each country can learn from the other on how to secure the budget by understanding the structure of the budgeting process. The advantage of this process is that makes each country's responsibilities transparent. With the process, it becomes possible to examine the feasible cost unit, and identify the source of budget at national, regional, school or other levels, prior to the actual project start. Hence the process makes it possible to develop a nationwide budget projection when a pilot project begins in one region.

At early stages of projects, a teachers' strike often happened, because the project paid just the minimum cost (meals, transportation and free lodging) and no daily allowance. However, with time this came to be handled by the member countries' members. Overall, this process allowed the member countries' counterparts to strengthen their attitude and sense of responsibility. Mr. Agaba, the National Coordinator leading the Uganda project advocated as follows (taken from an interview article in Japanese, translated into English):

> "Motivation can only be derived from within; financial incentives should not be used to pull forth one's motivation. Professional teachers will have continuously high motivation from the joy they find in teaching and learning as it is connected to their own professional growth. We must patiently change ourselves now based on a look at what things will be like in ten years (JICA, 2006)."

4-4 Learning Together through Project Design Study

The following are some of the characteristics of the project design study. Firstly, many of the studies (Malawi, Uganda, Nigeria, Niger, Senegal, Burkina Faso, Rwanda, South Sudan) were conducted by the team consisting of SMASSE Kenya staff and JICA staff. It was useful that SMASSE Kenyan staff could make practical suggestions to other member countries based on their own country's experiences. For example, for the 2006 Niger Project Design survey, the education minister and permanent secretary of Niger requested the project to conduct nationwide teacher training from the beginning, since they had known that SMASSE Kenya had already extended nationwide. In response to their request, the SMASSE Kenya staff explained their own experience on the process starting from the pilot project as a trial run to examine and develop the feasible model for subsequent national expansion. This suggestion helped the Government of Niger understand the importance of a step-by-step approach in launching the project. The author also could learn a lot from the Kenyan staff, while SMASSE Kenya staff could strengthen their capabilities through giving advice to other countries.

Secondly, in many cases, prospective Japanese experts of projects (Malawi, Uganda, Senegal, Burkina Faso, Rwanda, Zambia, Sierra Leone and Ethiopia) joined the project design team as members. As they take part in the initial planning phase of projects, they developed a sense of responsibility. Then, through discussions with member countries sharing visions, it became possible to build relationships of mutual trust with their counterparts. Also, Japanese experts were able to strengthen their practical capabilities by being involved in these processes.

Additionally, depending on the situation, high-level officials of member countries' Ministries of Education (Uganda, Malawi, Niger) were invited to Kenya for discussions and the Kenyan high-level officials shared the importance of commitment and sustainability with high level officials from the member countries based on their experiences. Thus, it became possible for the member countries to gain commitments from the government at high levels.

4-5 Case of Applying Other Countries' Experiences: Uganda

The Uganda project was initially formulated through technical exchanges with SMASSE Kenya. As depicted in Figure 7, the Uganda

project could apply the practical wisdom of Kenya, Zambia, and Malaysia through the SMASE-WECSA network, to develop teaching materials and teaching approaches that fit the context of each country. Specifically, just after the project began in August 2005, four National Trainers of the Uganda project spent approximately one month on an OJT Training in SMASSE Kenya. Through this OJT Training, Kenyan practical wisdom, such as its training approaches, development of teaching materials, and monitoring & evaluation tools could be studied. Beyond this, adhering to the context of Uganda, but using Kenya's experiences, culturally-appropriate training styles and teaching materials were developed. The national trainers (former mathematics and science teachers) who participated in this OJT Training stated that, "Although we specialize in mathematics and science education, we do not have the experience and expertise on how to develop INSET systems effectively. Therefore, using Kenyan experience as a base has been quite useful in this process. Nevertheless, we cannot apply the Kenyan teaching approach and INSET systems as they do not necessarily fit in well with the context of our own countries." While Uganda applied Kenyan experiences for conducting cascade training for the first three years, there were challenges as to how teachers can apply teaching approaches in classrooms at the school level after attending training. As noted previously, Uganda was interested in school based training through lesson study in Zambia, and Uganda had had a technical exchange with a team from Zambia in October 2008. As a result, Uganda developed training contents and materials on lesson study in 2009 by referring to Zambian experiences. Furthermore, in June 2009, two national trainers were attached to RECSAM in Malaysia for a one-month OTJ Training. They developed the training contents and materials on assessment and evaluation with technical support from specialists of RECSAM.

In addition, the Ministry of Education and Sports of Uganda sent not only INSET trainers but also curriculum specialists, examination specialists, university lecturers and education administrators to training programs in RECSAM and Japan to promote a greater sense of collaboration among them. As a result, this promoted collaboration within the country. For example, National Trainers are invited the advisory committee on the national curriculum and examination as panel advisors.

Figure 7: Process of Developing Teaching Materials

Source: Composed from SESEMAT Report; Interviews with National Trainers

As these project developments illustrate, member countries were not simply using other countries' experiences, but rather developed contents that fit together with their own countries' societal systems while accumulating their own practical wisdom. In other words, it was not simply a matter of introducing another country's model and then having a complete approach to INSET, but instead it was necessary to make a model workable for the country's development.

5. Implications of the Case / Conclusions

(1) Effectiveness of learning together

One of the prominent characteristics of SMASE-WECSA network is that member countries could learn together through the activities of network-type cooperation. The knowledge needed for enhancing classroom practices might be categorized as "tacit knowledge," which is a kind of knowledge difficult to be expressed in words; therefore, lesson demonstration and joint reflection might be useful methods to share practical wisdom. Moreover, practical training through the secondment to organizations in other countries have been effective to adapt their learning to develop training contents and training system.

(2) Value of network

It must not be forgotten that networks do not exist for their own sake. The SMASE-WECSA network serves as a platform where each country can learn through sharing practical wisdom, and whether such wisdom can be practically implemented depends on the initiative of each country. It is important to understand that practical wisdom needs to be adapted to fit in the context of each country.

(3) Re-design network in diversified relationships

The SMASE-WECSA network must make continuous and flexible changes in its structure for exchange and collaboration. As noted above,

many countries started to amass practical wisdom of their own, and they have begun to develop exchanges and collaborations among themselves. These changes are calling for the redesigning of the network such that it becomes conducive to more diversified exchanges and collaborations. Within the network structure, each of the following factors needs careful consideration: flexibility, transparency, fairness, feasibility, and giving prioritized support for enthusiastic countries.

(4) Language issues

Within Africa, in trying to build international exchange and collaborations, the issue of language is never avoidable. For example, Anglophone African countries can effectively communicate with partner Asian institutions, while the issue of communication becomes problematic for Francophone and Lusophone countries, especially given the limited resources available to them. One way to deal with the language variance is to build collaborations among linguistically similar regions. However, it is nevertheless necessary to make sure that wisdom is brought together from all the member countries despite their linguistical variance.

(5)Strengthening analytical work and information dissemination

The member countries have been sharing practical wisdom through the SMASE-WECSA network, however, this huge body of practical wisdom has not yet been much analyzed and published. From the medium to long-term perspective, in order to conduct practical research and disseminate information, there is a need to nurture academic practitioners who can analyze practical wisdom, and at the same time build collaboration with local and international researchers and research networks. As SMASE-WECSA network functions as a secretariat of ADEA's WGMSE, the relationship and roles between these two entities need to be re-examined to establish more effective operation in analytical work and information dissemination.

(6) Effective approach to network-type cooperation

Until now, JICA has been promoting network-type cooperation through bilateral technical cooperation. This technical cooperation has been proven effective to enhance classroom practices and establish INSET system at a country level, even under the existing system. However, generally speaking, tools and mechanisms of flexible support for network activities *per se* have been rather underdeveloped. If network-

type cooperation as a significant approach to sharing and creating practical wisdom is to be mainstreamed, exploration and development of effective tools and mechanisms to support regional activities through the existing network such as ADEA are called for.

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Case 2

Inspired by Sri Lankan Practice: Scaling-up 5S-KAIZEN-TQM for Improving African Hospital Service

Shunichiro Honda

1. Introduction

The "Better Hospital Service Program (hereinafter referred to as BHSP)"[1] aims at improving hospital care in Africa, using the knowledge package for management change called herein 5S-KAIZEN-TQM. This knowledge, originally developed in Japan and later spread in Asia, was discovered as being applicable by the African leaders within their context in the field of hospital management and quality of health care.

The project started in 2007 as an Africa-Sri Lanka-Japan triangular cooperation and is still progressing. It is a network-program involving African countries that share similar demands, and the number of participating countries has now reached fifteen as of 2012. Among them, Tanzania has played a leading role, developing itself into a pivotal country. Major direct beneficiaries are the hospitals in those countries. Their number has also increased over time both within and across member countries where tangible results are emerging. The core knowledge used in this project was developed by a hospital director in Sri Lanka by building on what he learned from both Japanese firms operating in his country and a management training he received. Japan has been supporting the movement as part of a follow up to TICAD III or the Third Tokyo International Conference on African Development.

In Section 2, we will first take a look at the process of the program's development. In Section 3 we will then take a close look at how Tanzania has developed its capacity to become a pivotal country in this exercise. Section 4 will examine the whole process to see how the scale up process has been possible. Section 5 contains the conclusion.

[1] Officially, this initiative on 5S-KAIZEN-TQM for hospital management consists of several separate but closely-coordinated sub-programs, including the Asia-Africa Knowledge Co-creation Program "Total Quality Management (TQM) for Better Hospital Services". In order to illuminate the entirety of the initiative, this paper collectively calls these sub-programs the "Better Hospital Service Program"

2. Catalyzing Knowledge Co-creation for Better Hospital Care: Triangular "Better Hospital Service Program"

2-1 Co-creating African Knowledge for Better Hospital Service

In May 2011, Mbeya Referral Hospital (MRH), in a remote Southern Highland of Tanzania, hosted its very first triangular training on KAIZEN, the second stage of a hybrid management change approach for better hospital care[2].

The event marked a point of achievement for a triangular initiative entitled "Better Hospital Service Program" linking Sri Lanka, fifteen African countries and Japan since its start in 2007. Forty-five people participants including hospital managers as well as health ministry officials from the three neighboring East African countries of Kenya, Uganda and Malawi as well as those of Tanzania witnessed the tangible achievements such as the clean and well-organized working environment in hospitals. They were informed of the progress of institutionalization and replications to over 50 major hospitals in the country. Above all, they were inspired by the dedication of the hospital staff in practicing the principles and approaches of 5S-KAIZEN-TQM in their hospital work. BHSP successfully helped Tanzania to emerge as an African pivotal country of the 5S-KAIZEN-TQM approach for better hospital care, developed out of Sri Lankan successful practice with Japanese knowledge at its origin.

2-2 About the Better Hospital Service Program (BHSP)

The improvement of hospital management toward a better quality of care and medical safety started to draw international attention as a critical area for better health in both industrialized and developing countries. This was partly triggered by recurring incidents of medical errors in developed countries, and it was enhanced by mounting evidence showing that better quality and safer care is likely to lead to higher utilization of facilities even by the poor in low-income countries.

BHSP, a triangular cooperation program assisted by JICA, specifically addresses the challenges of improvement of hospital service quality. It aims to share Sri Lankan and Japanese experiences and knowledge of 5S-KAIZEN-TQM with fifteen African countries and forms one of the follow-up actions of the Third Tokyo International Conference on Africa's Development (TICAD III).

[2] JICA 2011a.

2-3 5S-KAIZEN-TQM: Its Origin and Characteristics

5S-KAIZEN-TQM is a hybrid management change approach for medical facilities (See Box for details). It combines three closely-related but separate tools for productivity and quality improvement, namely 5S, KAIZEN, and TQM (Total Quality Management). The first step, 5S, is a set of entry actions towards a more advanced stage of KAIZEN-TQM, and it represents respectively for 5 actions of "Sort," "Set," "Shine," "Standardize," and "Sustain" for a better working environment. The Second step, KAIZEN, is a participatory performance and productivity improvement approach through incremental and reflective group actions. Finally, total quality management or TQM is the approach for system-wide management in pursuing higher quality in products and services. As shown in the step-wise characteristics of its approach, one of its unique features is that it places particular importance on the empowerment and mind-set changes of hospital staff toward the improvement of the quality of care rather than top-down upfront organizational restructuring. Thus, the very first recommended action is to improve their working environment so that they feel the benefit and the sense of achievement, which then provide the motivation and incentives for the staff to further continue their bottom-up improvement actions.

The Key Feature of 5S-KAIZEN-TQM[3]

Some selected key features of 5S-KAIZEN-TQM are as follows;

1) Team-based practice at hospitals

Upon the decision of officially adopting 5S-KAIZEN-TQM by senior hospital management, each participating operational unit first establishes a work improvement team (WIT) within the section as a sort of taskforce to lead and monitor actions. At the same time, a quality improvement team (QIT) is installed at the senior management level, which is composed of members of senior management as well as representatives from WITs. The expected role of QIT is to oversee, advises and monitors actions taking place in WITs in line with the organization-wide strategy and action plan of 5S-KAIZEN-TQM.

2) Step-wise approach of 5S-KAIZEN-TQM practice at the hospital level

The most notable feature of 5S-KAIZEN-TQM is its step-wise

[3] This box is largely based on Hasegawa et.al 2011a, Ishijima 2011 and JICA 2011b.

approach as below, starting from easier entry step of 5S towards more challenging advanced step of TQM via KAIZEN at the hospital level;

- ✓ *Step 1:* Work environment improvement through 5S activities application of TQM
- ✓ *Step 2:* Participatory problem-solving through the process of KAIZEN activities at the service front
- ✓ *Step 3:* Organization-wide management change and capacity development through the application of TQM

3) Sequenced scaling-up approach

5S-KAIZEN-TQM approach encourages partner countries to move towards practice changes at wider scale. In effectively doing so, it sets out a sequenced approach towards national roll-out. It recommends a country to first create one or more solid pilot hospital(s) with visible achievements. The pilot project is aimed at localizing the approach and demonstrating its relevance and efficacy to policy makers, administrators, hospital managers and practitioners. Upon the success of pilot activities with larger number of those who supports the initiative and the concomitant institutionalization, the country would then proceed to the national roll-out stage. With all these institutional set-up, concrete steps and scaling-up strategy, 5S-KAIZEN-TQM has been proven in Sri Lanka as an effective management change approach towards the quality hospital services in a wider scale.

Applying the 5S-KAIZEN-TQM approach to hospital management in a development country's context was an invention that came out of the practice of medical and health practitioners at Castle Street Hospital for Women (CSHW) under the leadership the then director of the hospital[4]. Learning from the practices of local subsidiaries of Japanese companies operating in Sri Lanka as well as the programs Dr. Karandagoda received at the Sri Lanka Institute of Public Administration (SLIDA), he and his staff creatively combined various management approaches and tools that originated in Japanese manufacturing companies to suit the Sri Lankan local context. His team successfully applied these in the hospital to yield a tangible outcome. Building on the success at CSHW, Dr. Karandagaoda further refined the approach to the package of 5S-KAIZEN-TQM, and this work was supported by Japanese health policy experts including Dr. Hasegawa and Dr. Handa, who acted as key

[4] The description of this section is largely based on Hasegawa, 2006

collaborators on the Japanese side. It was this body of knowledge that was shared through this BHSP.

2-4 Program Design of BHSP

(1)Two phases

To effectively impart the step-wise knowledge of 5S-KAIZEN-TQM, BHSP is sequenced into two phases. The focus of the first phase is 5S, which lays the foundation for the subsequent advanced steps with the presentation of the overall vision and strategy of the entire approach. After completing the first phase, participating countries then proceed to the more advanced levels of KAIZEN and TQM coupled with the necessary actions for national level scaling-up. Details of the two phases are presented in the Table 1.

Table 1: Two Phases of Better Hospital Service Program

	First phase	Second phase
Knowledge focus	**5S**	**KAIZEN and TQM**
General objectives	•Promote exchange and co-creation of locally adapted knowledge of 5S – KAIZEN - TQM with pilot 5S experimentations in preparation for national mainstreaming	•By building on the first phase focused on 5S, Phase 2 is aimed at enhancing and deepening locally-adapted 5S-KAIZEN-TQM through advanced practices, institutionalization and national rollout through the combination of experience sharing and country actions
Main program instruments	•Training sessions in Sri Lanka and Japan •Monitoring and field support visit by Japanese and Sri Lankan experts •Complementary support to country practices through bilateral cooperation by JICA	•Training in Sri Lanka, Japan and one of African countries (e.g. Tanzania) •Monitoring and field support visits by Japanese, Sri Lankan and African experts •Complementary support to country practices such as through bilateral cooperation by JICA •Provision of other opportunities of learning such as international workshop and seminars
Duration	1.5 years between the initial and final wrap-up training (Country pilot continues beyond 1.5 years.)	3 years including country execution

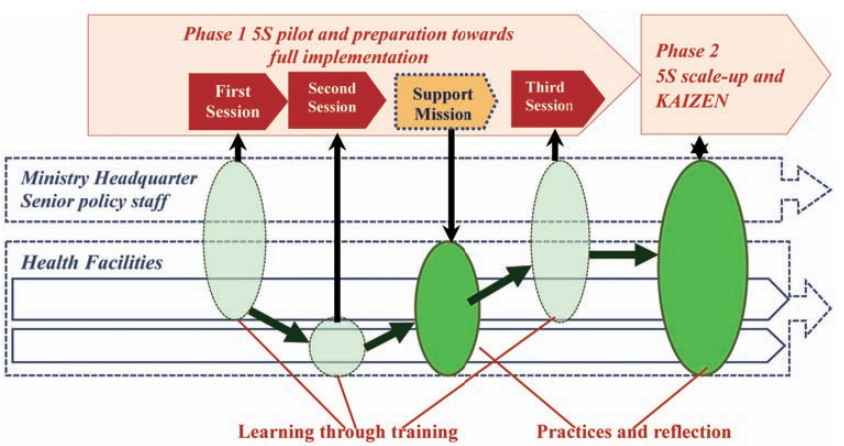
(2) Process-oriented learning

For both phase 1 and 2, the program adopts a reflective learning process among Asian and African countries. Through the process, participants are expected to adapt ideas and models they learned through training sessions, test them in their own countries upon their return, and feedback and share lessons for further actions. It systematically engages senior and middle management as well as the practitioners on the frontline to ensure a shared understanding of the concept and approach

among the key players. Training sessions, comprising class-room learning as well as field observation tours to both Sri Lanka and Japan, were also complemented by periodic monitoring and field support visits by Sri Lankan and Japanese experts. When requested by beneficiary countries, JICA also extended bilateral technical cooperation to health ministries as well as health facilities at each individual country level to support piloting and institutionalization.

To promote learning, the first phase centered on three intermittently-organized training programs; namely, 1) start-up training, 2) mid-term training and 3) final wrap-up training. As an integral part of the program, advisory missions composed of experts from Sri Lanka, Japan and neighboring countries were also sent to support implementation at each country level. Additionally, complementary bilateral cooperation may be provided through JICA's country offices in response to the request of the participating countries. Figure 1 illustrates the process of learning and practices:

Figure 1: Program Design of Better Hospital Service Program



Source: The author

The first start-up session is targeted at both ministerial staff in charge of health quality and human resources policy as well as senior managers of the pilot hospitals, who are expected to exercise the leadership to promote change. It aims to facilitate mind-set change by eliciting a deeper understanding of and commitment to this approach among them. Soon after the first session, a separate second training is organized, this time for both middle-level managers and frontline staff directly in

charge of day-to-day 5S actions. At the end of these introductory training phases, participants are expected to formulate a strategic action plan to translate what they have learned about 5S-KAIZEN-TQM into practices in their countries. These plans are implemented in the officially designated pilot hospital of each participating country. The main objective of this step is to test the applicability of the approach in each country' specific context and try whatever adaptions as necessary. After about a year of experimentation, the key senior staff of participating countries gathers again to report back the results of their pilots, share lessons learned and reflect for further actions in the group. Through this continuing process of learning and practice, the implementing countries are expected to deepen their understanding of the approach.

The program package of the second phase, largely similar to that of the first phase, is composed of training programs and advisory field missions with complementary technical cooperation that has been official requested at each country level.

2-5 Progress and Achievements[5]

Since the launch of the program in 2007, fifteen African countries in two separated groups have completed the first phase, and they are all in the second phase as shown in Table 2.

Table 2: List of Better Hospital Service Program Participating Countries

	Sub-region	Country	Program duration
First Group	West Africa	Nigeria, Senegal,	***(Phase 1)*** March 2007 ~ November 2008 ***(Phase 2)*** October 2009 ~
	Eastern and Central Africa	Eritrea, Kenya, Tanzania, Uganda	
	Southern Africa	Madagascar, Malawi,	
Second Group	North Africa	Morocco	***(Phase 1)*** March 2009 ~ October 2010 ***(Phase 2)*** August 2011~
	West Africa	Benin, Burkina Faso, Mali, Niger	
	Eastern and Central Africa	Burundi, DRC Congo,	

Several African participants commented that they were particularly inspired by what CSHW in Sri Lanka has achieved in the quality improvement of hospital care in spite of the challenging context including the lack of resources.

As of now, all of the participating countries are continuing their 5S practice,

[5] JICA 2011b.

albeit at a different stage. In general, countries among the first group are at a more advanced stage due to their long years of execution than the second group countries, which are mostly in the process of adapting the approach into each country context through the pilot implementation.
Countries are at different stages. Three countries, namely Tanzania, Nigeria and Uganda, have progressed to the full KAIZEN implementation stage. Madagascar, Senegal and Democratic Republic of Congo are at the early phase of KAIZEN field trials with promising good practices in several hospitals. The institutionalization and scaling-up is advancing in virtually all of the countries of the first group. In Kenya, Malawi, Tanzania and Uganda, 5S-KAIZEN-TQM has been institutionalized through incorporation into the government official program, guideline or tools related to health services quality. It is also worth noting that the collaboration and mutual exchange among these countries are increasing and deepening, triggered by the country actions of 5S-KAIZEN-TQM. The work toward institutionalization is also underway in Eritrea, Madagascar, and Senegal. Replication of the 5S pilot is progressing in all countries with Tanzania prominent, where 56 hospitals including all tertiary and specialist hospitals have already started to practice 5S.

Apart from the different length of implementation years between the two groups, several factors for the different progress seem to have emerged from the records of the field monitoring mission. First, a better policy and institutional environment including country stability do matter. As will be touched upon in the next section, Tanzania had already laid out much of its policy and institutional frameworks in relation to quality improvement in health services prior to the introduction of 5S-KAIZEN-TQM, based on which the approach has been able to thrive and be sustained, whereas such a framework was not in place in most countries at the time of introduction. Such a favorable environment emphasizing quality improvement also supported the key like-minded leaders and change agents through the provision of legitimacy and incentives to take risk and experiment with the new approach for adaption and its rolling-out.

According to the report prepared by a field advisory and support mission dispatched by JICA, responses from training participants indicated that what they have learned on 5S-KAIZEN-TQM through BHSP has been very relevant and applicable to the organizations they

belong to[6]. Almost all respondents stated that the approach fits well to the direction of policies and strategies of their ministries and hospitals. Several respondents commented that the simplicity and affordability of the approach have made it easier for them to apply. With such relevance and applicability, the majority of participants stated that they are applying the approach in their organizations after their training and have felt the impacts. The areas of concrete actions they are taking include:

- revision of policies, institutional frameworks and guidelines related to the quality of health services;
- actions to improve the facilities and the work environment in their hospitals;
- revision of the structure and setting of organizations they manage or belong to;
- improvement of techniques and methods in the daily service and;
- improvement of staff skills and the change of mind-set toward quality hospital services.

3. Tanzania Case Study: An Emerging Pivotal Country in 5S-KAIZEN-TQM

As stated above, Tanzania has come farthest among the fifteen countries. This section specifically illustrates the Tanzanian case, illuminating how the country has translated BHSP learning into its national practice and earned a position as an African regional center of excellence in 5S-KAIZEN-TQM[7].

After the successful piloting in the initial pilot hospital, the practice has been institutionalized and rolled out to other hospitals across the country as an integral part of the national quality improvement program under the country's sector-wide Health Sector Strategic Plan (HSSP). Moreover, Tanzania's achievement has become a regional program of excellence for the neighboring East African countries of Kenya, Uganda and Malawi, which are now in the process of expediting implementation of the approach.

3-1 Participation in BHSP and the Initial Pilot

For Tanzania, improving health services quality at health facilities was a daunting task. Recognizing the challenge, MoHSW had taken several

[6] ibid.

[7] In Tanzania, 5S-KAIZEN-TQM is formally called as 5S-CQI-TQM in which CQI denotes "Continuous Quality Improvement". In this paper, 5S-KAIZEN-TQM is used throughout.

actions in this area including the establishment of Department of Health Quality Assurance under the Office of Chief Medical Officer (CMO) and the formulation of "Tanzania Quality Improvement Framework (TQIF)" aiming to promote and help embed the culture of quality services at all levels through a number of concrete actions. But even with these efforts, progress in quality improvement (QI) including that in the health facilities had been limited due to various bottlenecks.

It was in this context when the opportunity of participation in BHSP was offered to Tanzania and several other African countries. Through preparatory communications between MoHSW and JICA[8], MoHSW became increasingly aware of the potential of 5S-KAIZEN-TQM in QI and decided to participate in BHSP. The Ministry proceeded to select Mbeya Referral Hospital (MRH) as the first pilot hospital for the trial in Tanzania and sent several staff of MRH to the introductory seminar held in 2007.

Mbeya Referral Hospital (MRH) is a third tier referral hospital serving four regions in Tanzanian Southern Highlands. It is the top tier hospital, however; MRH is also a hospital located in a very remote city, 1,000 kilometers from Dar es Salaam. Through the training sessions including

Figure 2: Before and After the Introduction of 5S Activities
(The case of Mbeya Referral Hospital in Tanzania)

August, 2007
Before the start of 5S practice

August, 2008
One year after the 5S launch

[8] JICA, with its policy adviser in human resources for health attached to MoHSW, has been supporting the development of Human Resources for Health Strategy and other accompanying policy instruments and the potential relevance of 5S-KAIZEN-TQM was discussed as an integral part of JICA's support to Tanzania's health sector.

the observation tour to Sri Lanka and Japan, Dr. Elueter Samky, Director-General of the hospital, and his staff were firmly convinced of the relevance and high potentiality of the concept and approach for improving hospital management. Upon his return to MRH, he exercised leadership to designate five hospital units as model areas for pilot 5S activities in August 2007 with the establishment of a work improvement team for each unit. In just four months, the first five units demonstrated tangible results, such as the continuous improvement of the work environment by the committed staff, as was confirmed by the first monitoring and evaluation by MoHSW conducted in December the same year.

3-2 Institutionalization and National Scaling-up

Witnessing the visible changes in the first pilots at MRH, MoHSW was quick to take actions in preparation for national rollout. The first action was the dissemination of concepts among key officials of MoHSW and a demonstration. A national seminar was organized with the participation of key officials of MoHSW including the directors of major hospitals. The seminar introduced the concepts and approaches with visual illustrations of the successes and experiences of Sri Lanka, as well as that of the MRH pilot. Following the unanimous agreement at the end of the national seminar, MoHSW proceeded to implement two demonstration pilot programs in MRH and Muhimbili National Hospital. The two Hospitals then succeeded in further validating the effectiveness and efficiency of the approach, which was then reported back to the senior management of MoHSW.

At the beginning of 2008, MoHSW officially adopted the approach as the core of the national quality improvement program as part of the national Health Sector Strategy and moved ahead for national rollout with the following institutional arrangements:

■ **The mechanism for sustained national scale-up:**

- ***Institutionalization of 5S-KAIZEN-TQM:*** MoHSW incorporated the approach into the revised Tanzania Quality Improvement Framework (TQIF), a document for concretizing the QI-related actions of HSSP. This was followed by the development of "Implementation Guideline for 5S-CQI-TQM approaches in Tanzania," which provides the key knowledge of the approach as well as standardized implementation steps for the national rollout.

- ***Cascaded training approach for national rollout:*** MoHSW organized multiple ToT sessions to train nominated staff from participating hospitals including all national, specialized and regional referral hospitals as well as the significant number of district hospitals.
- ***Quality Improvement Team (QIT):*** All participating hospitals receiving 5S-KAIZEN training have established QIT for operationalizing 5S.
- ***Communication:*** MoHSW also devised instruments for communicating the 5S concept to health workers such as through the preparation and nationwide distribution of 5S posters in English and Kiswahili.

■ **Monitoring mechanism for continuous learning cycle:**

- ***Bi-annual Progress Report Meeting (PRM):*** Representatives from hospitals implementing 5S meet bi-annually to share their concrete experiences and discuss the way forward to further improvement of 5S activities complemented by learning sessions for skill enhancement.
- ***Periodic consultation visits with user-oriented performance assessment:*** 5S experts regularly visit implementing hospitals for performance assessment using a standardized monitoring and evaluation sheet and provide technical advice for further refinement of 5S activities.

3-3 Scaling-up at the National Level

Building on the inspiration gained from Sri Lankan best practice, 5S-KAIZEN-TQM has started to take root in a large number of hospitals in Tanzania. First of all, it has been officially designated the foundation of all QI approaches in Tanzania as stated in TQIF and implementation guideline[9]. As of September 2012, some 56 hospitals including all national, specialized and regional referral hospitals as well as a number of municipal and district hospitals have been trained, have established QIT and have implemented 5S[10]. Thirteen out of these hospitals have moved on to the second step of KAIZEN, the evidence-based participatory problem-solving actions for service quality improvement. Through the cascaded approach, well over 5,000 health workers have been trained in 5S. Moreover, it has been reported that not only the hospitals but also several health administrations at the regional and district levels have

[9] MoHSW 2009

[10] Mohamed 2012

started to monitor the progress of 5S activities in the health facilities under their jurisdictions. According to a performance assessment, the majority of workers trained and implementing 5S-KAIZEN expressed a more positive attitude now toward QI than previously.

MRH, the first pilot hospital, has advanced further and started to produce notable outcomes while the approach is being scaled-up nationally. Under the leadership of Dr. Samky, MRH has now expanded 5S with QIT to all 54 units in three years with many units moving to the KAIZEN stage. Some of the achievements through KAIZEN include the reduction of overstocked inventory at medical stores sections, the reduction of waiting time for patient consultation (down to one third from 46 minutes to 15 minutes) and the doubling of reimbursement to MRH from the National Health Insurance Fund through better management at the accounts unit.

The incorporation of 5S-KAIZEN-TQM into pre-service training programs is being tried at some hospitals. Nursing students in clinical rotation are taught the approaches and are practicing during their clinical rotation.

3-4 Tanzania as the Regional Center of Excellence

Over five years of continuous execution has made Tanzania the regional center of excellence in quality improvement of hospital care through the application of 5S-KAIZEN-TQM. MoHSW has locally developed original training materials and tools including a practical session guideline for 5S training of teachers (ToT) facilitators and monitoring and evaluation tools among others. These materials have been continuously updated and improved. With these materials and trained local experts at hand, the country has actively shared its experience and lessons learned with other African countries— especially with its three neighbors of Kenya, Uganda and Malawi—since 2009.

Tanzania annually welcomed African participants into the regularly-organized training of trainers programs for both 5S and more advanced KAIZEN approach, accepted a study tour for a group of African countries to observe the work of MRH and dispatched Tanzanian experts to neighboring countries. The participation of officials from neighboring countries helped accelerate the formulation of official documents related to quality improvement as well as the preparation of

5S-KAIZEN training materials in these countries. Such examples include Quality Model of Kenya, 5S-CQI-TQM Guideline and 5S Handbook of Uganda, and 5S-KAIZEN Monitoring and Evaluation Tools of Malawi[11]. What is more, a new groundbreaking collaboration among WHO, U.K. North Cumbria University Hospital NHS Trust, Mbeya Referral Hospital , and JICA has started under the Africa-wide initiative of African Partnership for Patient Safety led by WHO Afro.

At the DAC Triangular Cooperation Workshop held in Lisbon in September 2012, Dr. Mohamed, Acting Director of Health Quality Assurance of MHSW, stated that the acceptance of trainees from neighboring countries to hospitals in Tanzania has also motivated Tanzanian staff in the promotion of 5S and KAIZEN activities[12]. This clearly indicates that sharing and disseminating knowledge and experiences with other countries is a two-way joint learning process toward stronger capacity.

4. Scaling-up 5S-KAIZEN-TQM through a Multi-layered Triangular Program of Learning and Actions

Despite its ongoing status, the program has produced several notable achievements as seen above. Practical applications of 5S-KAIZEN-TQM are underway in the pilot hospitals of fifteen countries. Several countries have been mainstreamed or are in the process of mainstreaming the approach into their strategies and framework of quality assurance for health services. Countries like Tanzania and Kenya are now scaling-up pilot practices to other hospitals. Through the participation in the program, Tanzania has emerged as an African pivotal country in this approach for other African countries to learn from. What then are the key factors for these achievements?

4-1 Matching the Country's Knowledge Demands and the Supply of Appropriate Knowledge

(1) Local knowledge needs

One factor for the achievement so far was timely response to the increasing demands and needs for a practical and low-cost change management approach for better hospital services. As stated earlier, the quality of care has become an important global health theme. In response to such global moves, many African countries have completed

[11] ibid.

[12] ibid.

or are in the process of formulating quality improvement frameworks with the assistance of donor agencies. For instance, the ministry and hospital staff in Tanzania are expected to improve their performance in line with the client service charter and the quality improvement framework for health service.

(2) Supplying relevant and appropriate knowledge – simple ideas and practicable models

Such knowledge demands then needed to be matched by the timely supply of a high quality program with practical and relevant knowledge contents. In that regards, it is safe to say that BHSP with 5S-KAIZEN-TQM has been able to fulfill such knowledge demands of the African health workforce under the increasing pressure for better management and performance.

Its approach, tools and implementation methods are simple, flexible and affordable. It is also a proven approach in the developing-country context of Sri Lanka which had a lot in common with African countries. In spite of the ongoing reform, medical and health practitioners in African countries continue to face shortage of resources including budget, human resources and medical supplies. The simple and practical design centered on the step-by-step approach enables users in developing countries to easily learn and apply even in a challenging working environment.

The approach can be flexibly adapted to suit diverse country and sector contexts. Its application requires only minimal costs such as those for undertaking necessary training programs. Its simple design does not necessitate expensive professional consultant services for implementation. Improved efficiency in service provision through its application could even generate extra savings for other essential activities. The simple and practicable nature of 5S-KAIZEN-TQM eventually resulted in its swift localization in Tanzania, from which other African countries are now able to learn.

4-2 Institutional Innovations for Mutual Learning and Knowledge Co-creation

(1) Systematic creation of processes and spaces or "*Ba*" for mutual learning and actions

BHSP is so designed that it systematically creates processes and spaces or "*Ba*" for learning and actions beyond the knowledge of 5S-KAIZEN-

TQM through clear task-orientation, the integration of a PDCA cycle (Plan, Do, Check and Action), a combination of class room teaching and field observation and through opportunities for mutual learning among other African colleagues. BHSP training sessions combine both class-room teaching by experts and field observation trips in Sri Lanka and Japan. In the wrap-up training program at the end of the first phase, participants from beneficiary countries gather to share the experiences and lessons from their pilot implementation with African counterparts for reflection. Toward the end of training program, each country representative is tasked to draft a national action plan for further actions such as the start of more advanced KAIZEN activities and institutionalization of 5S-KAIZEN-TQM into their national framework. These features of process-oriented learning have thus been instrumental in bringing out a stronger commitment in participants for sustained national practice.

Also, within each hospital, the core implementation strategies of 5S-KAIZEN-TQM embody the creation and institutionalization of spaces or "*ba*" for learning and actions toward continuous incremental improvement for better management. Under the leadership of senior management, WITs were established at unit/section level. This was then followed by the establishment of a QIT consisting of senior management and representatives of WITs in charge of monitoring and supervising the activities of WITs. The implementation strategy of 5S-KAIZEN-TQM is consciously designed to devise these task-oriented and self-organized improvement teams under the leadership of senior management for continuous and sustained practices of improvement toward better hospital services.

(2) Systematic engagement of and support for leaders and agents of change

The leaders and agents for change have certainly played critical roles all through the program. An additional but important feature of this program, however, is its systematic engagement of such leaders and key change agents ensuring that they lead the process of translating knowledge into sustained actions on a wide scale. Firstly, the program consciously involves both key ministry officials in charge of health service quality as well as the key staff of the designated pilot hospital, the latter including both hospital managers and the practitioners, from the onset. By engaging both of these, the program was able to assure its legitimacy and heighten motivation to the pilot experimentation.

Secondly, the simple and flexible implementation strategy such as the establishment of WITs and QIT has also helped provide a more-enabling institutional environment for both top leaders and the leaders of middle-management in driving and sustaining the improvement activities.

4-3 The Role of External Actors (Donors)

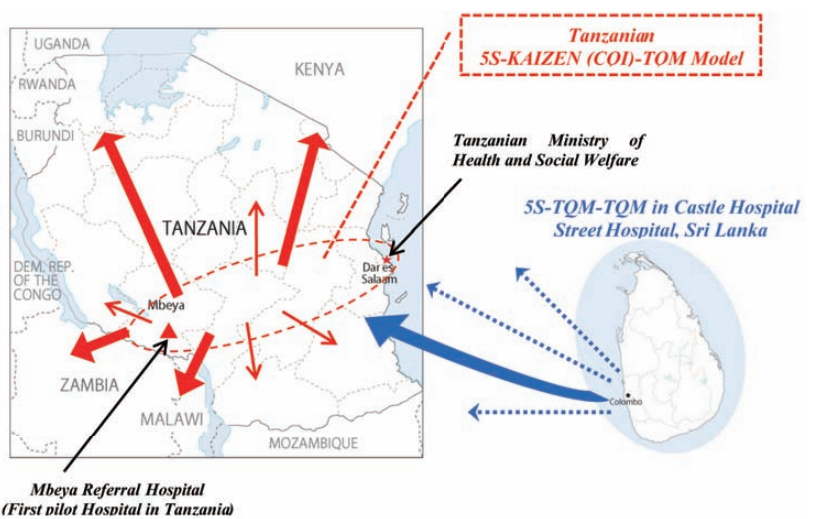
(1) Sri Lanka as the source for appropriate knowledge and inspiration

In this program, the basis of the knowledge was first developed in Sri Lanka, while the root ideas came from Japanese manufacturing practices. Thus, Sri Lanka can be said to have played the role of a pivotal country, providing the knowledge base. Following refinement and full development of 5S-KAIZEN-TQM among the Sri Lankan and Japanese specialists, the CSHW, with the distinction as the Asian center of excellence in the approach, has continued to play the key role of inspiring and presenting a replicable model to senior officials and key hospital staff of African countries.

(2) The emergence of Tanzania as an African center of excellence in 5S-KAIZEN-TQM

A remarkable aspect of BHSP is the emergence of Tanzania as an African center of excellence at a relatively early period as depicted in Figure 3.

Figure 3: Multi-layered Knowledge Exchange Process of 5S-KAIZEN-TQM



Source: The author

The emergence of Tanzanian as an African pivotal country has enabled the learning to be dynamic and multi-layered. The geographical, cultural and contextual proximity of Tanzania to African countries, especially to its East African neighbors, has helped to enhance the knowledge accessibility and the relevance. In other words, Tanzania has started to play the dual role of beneficiary and pivotal country in knowledge sharing in the course of a single triangular program.

It is interesting to note that a Tanzanian senior health ministry official in charge of quality assurance stated in his presentation at an international workshop that "Continuous practice of Triangular and South-South Cooperation develop not only other country's capacity but also ours." This statement underscores that fulfilling the dual roles of learning and teaching could further lead to deeper understanding of the knowledge in question.

(3) JICA and Japanese experts as knowledge mediator and facilitator

JICA has played multiple roles in the initiative. In all of them, the presence of committed Japanese experts and staff were instrumental in JICA's effectiveness as a knowledge mediator and facilitator.

Firstly, Japanese experts including Dr. Hasegawa were active mediators and facilitators of knowledge connecting Sri Lanka, Japan and African countries. Dr. Hasegawa, a Japanese Health Policy specialist, both identified and gave professional validation to the excellent practice at CHSW through his JICA-funded field survey. Along with professional colleagues from Japan and Sri Lanka, including Dr. Karandagoda and Dr. Handa, Dr. Hasegawa went on to further conceptualize the practice into 5S-KAIZEN-TQM and, with the aid of experts from developing countries and Japan, disseminated this know-how to other countries through channels such as BHSP.

Secondly, JICA, using its extensive network of field offices, also helped facilitate the BHSP process of knowledge exchange between Sri Lanka and African beneficiaries, both in program formulation and implementation. During the implementation, JICA technical cooperation experts and JOCV (Japan Overseas Cooperation Volunteers) in the country assisted in the execution of pilot projects, institutionalization and rollout of the approach by hospitals and ministries.

Finally, it is interesting to note that several Japanese hospitals have invited Dr. Karandagoda to their hospitals in Japan to learn from the Sri Lankan experiences. This is a proof of the importance of the two-way process of knowledge sharing and learning in this globalizing world.

5. Implications and Lessons

This case clearly presents several lessons and implications for other similar triangular cooperation programs involving multiple beneficiary countries. The case highlights:

a) the importance of effectively matching the demands and supply of knowledge by the identification of knowledge needs as well as the relevance and applicability of knowledge contents;
b) the importance of good program design with adequate sequencing and combination of various instruments such as training and pilot practices, so as to ensure the continuous process of mutual learning, reflections and actions among the partners;
c) the systematic engagement and nurturing of leaders and key change agents for sustained country practices;
d) the need for complementary technical support to beneficiaries in the process of pilots, institutionalization and rollout in most cases; and
e) the identification and promotion of the good performer among the beneficiaries whenever appropriate so as to create multiple channels of knowledge exchange.

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Case 3

The Triangle of Hope: Promoting Investment in Zambia through Malaysian Experiences

Yukimi Shimoda

1. Introduction

This case presents a project for sharing experiences between Asia and Africa. This cooperation aimed to assist in the development of Zambia's economy by improving the investment climate and inviting foreign direct investment (FDI). It utilised experiences and knowledge from Malaysia, which over the decades overcame the economic problems Zambia currently faces. The project was led with the concept of the "Triangle of Hope (ToH)" introduced by a Malaysian expert. The venture was implemented in two phases: Phase I 'Triangle of Hope, Strategic Action Initiative for Economic Development (ToH SAIED)' in 2006-2009 and Phase II 'Zambia Investment Promotion Project – Triangle of Hope – (ZIPP-TOH)' in 2009-2012. The Zambian organizations which played important roles were the State House, the Cabinet Office, the Ministry of Commerce, Trade and Industry, and the Zambia Development Agency (ZDA), as well as other line ministries, which undertook various tasks to improve the investment climate. With the strong initiatives of the government, high-level task forces were established to conduct the necessary actions to improve the investment climate.

Throughout the two projects, Malaysian experts supported Zambia's efforts, providing advice and know-how derived from their experiences in Malaysia. Their support brought significant outputs from the policy level to the practical level: the formation of the Client Charters and the development of investment promotion tools (e.g. the investment booklet, sector profiles). A number of investment promotion missions were dispatched to and from Zambia. Several investment projects were officially approved. Steady steps have been taken toward a diversified economic structure for Zambia and a better investment climate. These activities have been harmonized with those of Zambia's Private Sector Development Reform Programme.

First, this paper describes the background and main activities of this cooperation. Then, examining outputs, the paper looks at some key factors that contributed to its progress, along with some implications that can be derived from the cooperation between Asia and Africa.

2. Background: Encounter of the Two Countries

2-1 Sharing the Experiences

(1) Zambia: The necessity for economic diversification

The economic and industrial structure of Zambia, a landlocked country, has heavily been dependent on its copper resource. Its economy and financial conditions are significantly influenced by the international price of copper. Since the introduction of the Poverty Reduction Strategy Paper (PRSP) and the Transitional National Development Plan (TNDP) in 2002, the policy priority of the Government of the Republic of Zambia (GRZ), which focused on the social sector, has shifted to the one more emphasised on the economic sector.[1] In addition, the GRZ has been making efforts to diversify its monoculture economic and industrial structure since its independence in 1964 from the United Kingdom. The GRZ prioritizes the promotion of investment through the improvement of the investment climate, in order to support its economic development and diversification.[2]

Under these circumstances, the GRZ formed the Fifth National Development Plan (FNDP) and the National Long Term Vision 2030 (Vision 2030) in 2007. The Vision 2030 aims to accelerate Zambia's economic growth through the implementation of the FNDP and future national development plans to become a middle-income country by 2030. The Six National Development Plan formulated in 2011 also emphasises the importance of economic development and diversification.

[1] CAS 2004.

[2] Zambia's started the reform of its investment policy in 1991 and introduced a series of acts, for instance, the Investment Act of 1991, the Companies Act of 1995, and the Banking and Financial Services Act of 1994 (Mwitwa 2006).

(2) Malaysia: Rapid economic development and SSC

Like today's Zambia, Malaysia had a similar economic structure before the 1970s, which mainly relied on raw materials such as rubber, palm oil, and tin. However, during the 1970s and 1980s, the economic structure of Malaysia rapidly changed through the development of secondary industries such as the electronic industry, by inviting FDI.[3] Although there was a temporary decline of FDI in the 1980s due to the end of the 1970's favoured treatment of foreign capital and increases of domestic wages, the Government of Malaysia (GOM) introduced new favourable incentives for FDI, which resulted in the rapid increase of foreign capital in the 1990s. In 2005, per capita gross domestic product (GDP) of Malaysia became US $5,080, almost ten times bigger than that of Zambia's US $500. The two countries, which in 1970 were at similar developmental levels (GDP per capita of Malaysia and Zambia were US $400 and $430, respectively), have taken quite different paths.[4] Malaysia is currently an upper middle-income country.[5]

The GOM started their South-South Cooperation (SSC) in the 1980s, calling it the Malaysian Technical Cooperation Programme (MTCP). Their main activities were comprised of short-term training (less than three months), scholarships, and expert despatching. For instance, the total number of the short-term training participants until 2005 was about 1,800 from 135 countries, among which the number of those from the ASEAN region was the highest.[6] Almost all training participants were government officials.[7] In trade and investment, training programs were offered mainly by the Ministry of International Trade and Industry (MITI), the Malaysian Industrial Development Authority (MIDA),[8] Malaysia Productivity Corporation (MPC), and the Malaysia External Trade Development Corporation (MATRADE). Among them, MIDA is

[3] Hiroshima University & MRI 2006, p. 83.

[4] Homma 2012, p. 1.

[5] OECD 2012.

[6] Hiroshima University & MRI 2006, p. 113.

[7] This trend is recently changing. The MATRADE is, for instance, conducting training for those of chambers of commerce.

[8] The official name of the MIDA has been recently changed into the Malaysian Investment Development Authority (MIDA).

known for its major role in contributing to the Malaysian economic miracle.[9] It has conducted seminars related to investment promotion for least developed countries since the 1990s.

Cooperation for SSC between Malaysia and Japan/Japan International Cooperation Agency (JICA) started with the latter covering the whole cost. However, since 2001, both countries have split the cost evenly under a new scheme, called the Malaysian Technical Cooperation Programme – Third Country Training Programme (MTCP-TCCP).[10]

2-2 Seamless Cooperation Led by the Triangle of Hope

(1) Making arrangement for matching two countries

During 2003-2004, the GRZ was searching for ways to improve the investment climate of the country. They conducted studies assisted by the World Bank (WB),[11] some of the recommendations of which were adopted to form the Private Sector Development Reform (PSDR) agenda in 2004. However, the agenda was not implemented as planned due to a lack of effective institutional structure. In 2005, the GRZ established the PSDR Programme (PSDRP), which consisted of a steering committee, working groups in priority areas, a secretariat, and a basket fund created with support of bilateral donors (i.e. Netherlands, Finland, UK, and Sweden).[12] WB, USAID, and EU also supported the PSDRP. In parallel with the PSDRP, some donors came to support Zambia's PSDR: WB's SEED project and the US Millennium Challenge Account Threshold program.[13] Under these circumstances, JICA also began to support the GRZ, in cooperation with experts from Malaysia.[14]

Preparation of the cooperation between Zambia and Malaysia: 2004-2006

Cooperation between Zambia and Malaysia was prompted by the third Tokyo International Conference on African Development (TICAD III) in

[9] Jegathesan & Ono, 2008.

[10] Hiroshima University & MRI 2006, p. 113.

[11] IFC PEP-Africa and FIAS 2007, *Review of the Government of Zambia's Private Sector Development Reform Program (PSDR) and Recommendations for Enhancing Impact*, p. 5.

[12] IFC 2007, p. 5, and JICA 2008, pp. 9-10.

[13] IFC 2007, p. 5.

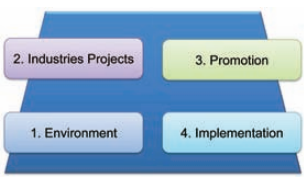
[14] The ToH Programme was a 'fast track one, which aimed to implement urgent, important issues in a top-down style, although the action agendas had been formed based upon the consensus among those of the government and the private sectors. On the other hand, the PSDRP was more comprehensive program involving a wider range of stakeholders from the government to the private (JICA 2011, p. 8).

2003. The TICAD III called for assistance from the international community for the 'expansion of partnerships' as one of the eight important development agendas.[15] The agenda particularly emphasised the cooperation between Asian and African countries by sharing the former's know-how and experiences of economic development and by establishing cooperative networks in the areas of agriculture, capacity building, technological transfer, and trade and investment.

It was from these trends that the idea of utilising Malaysian's development experiences for assisting Africa emerged. In 2004, the JICA Malaysia Office and the Economic Planning Unit of the Prime Minister's Office, the GOM, sent a joint mission to Kenya, Zambia, Zimbabwe, and

Box 1: The Concept of the Triangle of Hope and the Quadrant Strategy[16]

For the economic development of a country, harmonisation of three forces is indispensable: 1) political will and integrity, 2) civil service efficiency and integrity, and 3) private sector dynamism and integrity. The most important point is to foster a common understanding of the concept among all stakeholders involved in the three forces and to take their cooperative endeavours towards the implementation of various development plans in the same direction.



The quadrant strategy is a pathway to connect the ToH with the ultimate object of creating jobs and wealth within the country. It takes four stages: 1) creating an investment environment, 2) identifying prioritised economic/business sectors, 3) implementing investment promotion, and 4) ensuring actual implementation.

[15] MOFA 2003.

[16] JICA, 2008, pp. 6-7, and Jegathesan & Ono 2008, pp. 211-216.

South Africa, in order to find possibilities for SSC activities.[17] Among the participants was Dato' J. Jegathesan, the former Deputy Director General of the MIDA, who was chosen for his rich hands-on experience in promoting investments. In Zambia, he presented the concept of the Triangle of Hope (ToH) to the Vice Minister of the Ministry of Commerce, Trade and Industry (MCTI) and the Minister of the Ministry of Finance and National Planning (MoFNP).[18] ToH is a concept created out of Malaysia's experiences that emphasises three forces as prerequisites for a country's economic development: 'political will', 'civil service', and 'private sector'.

The concept of the ToH as the strategic action initiative for national economic development was well accepted in Zambia, which resulted in the official request of assistance to the then Prime Minister of Japan, Junichiro Koizumi and JICA. In response to this request, in the first half of 2005, JICA dispatched Mr Jegathesan several times to Zambia to explain the concept and foster a shared common understanding of the concept among a wide range of various stakeholders, from the late President Levy Patrick Mwanawasa, parliament members, and government officials to those in the private sector.

During 2005 and 2006, the GRZ, with the support of Mr Jegathesan and JICA, made various preparations to introduce the ToH in Zambia. Under the President's initiative, twelve Task Forces[19] were established to identify important issues in selected sectors and make necessary recommendations for the strategic policy of Zambia's economic development. Each task force consisted of three members from related line ministries and two from the private sector. For supervising and monitoring their activities, a Steering Committee was also appointed,

A briefing of Mr. Jegathesan to the President of Zambia and ministers

[17] There countries were selected bases upon the concerns of their geo-political characteristics. This mission also became the opportunity for the MIDA, the MPC, and the MATRADE to create triangular training for African countries.

[18] It is currently the Ministry of Finance (MOF).

[19] These Task Forces were 1) air cargo hub, inland ports, 2) agriculture, 3), banking and finance, 4)cotton, 5) education, 6) government streamlining, 7) health, 8) information communication technology, 9) multi-facility economic zones (MFEZ), 10) small and medium enterprises, 11) tourism, and 12) mining (added later).

which was chaired by Dr. Musokotwane, the Deputy Secretary to the Cabinet, and co-chaired by the Special Advisor to the President (Programme Implementation and Monitoring), and the Resident Representative of the JICA Zambia Office. At the beginning of 2006, the Task Forces submitted their recommendations. By reference to the recommendations, each line ministry prepared action agendas. Consequently, the GRZ set twelve ToH Action Agendas, uniquely including health and education sectors as the priority sectors for their economic development. Thus, the GRZ started taking concrete steps towards the realisation of the ToH.

(2) Two projects: Extended cooperation

The 12 ToH Action Agendas, now officially approved, had to be monitored to secure appropriate implementation. Therefore, one project was planned for supporting the GRZ to monitor the Agendas. At the end of the project, an urgent need emerged to develop the capacity of The Zambia Development Agency (ZDA), which was a newly established institution in charge of the investment promotion during the first project.[20] Consequently, the implementation of Thus Zambia's ToH programme came to be supported by the following two projects in which Malaysian experiences and know-how of investment promotion gave a significant influence.

Phase I 2006-2009: The strategic implementation of the Action Agendas

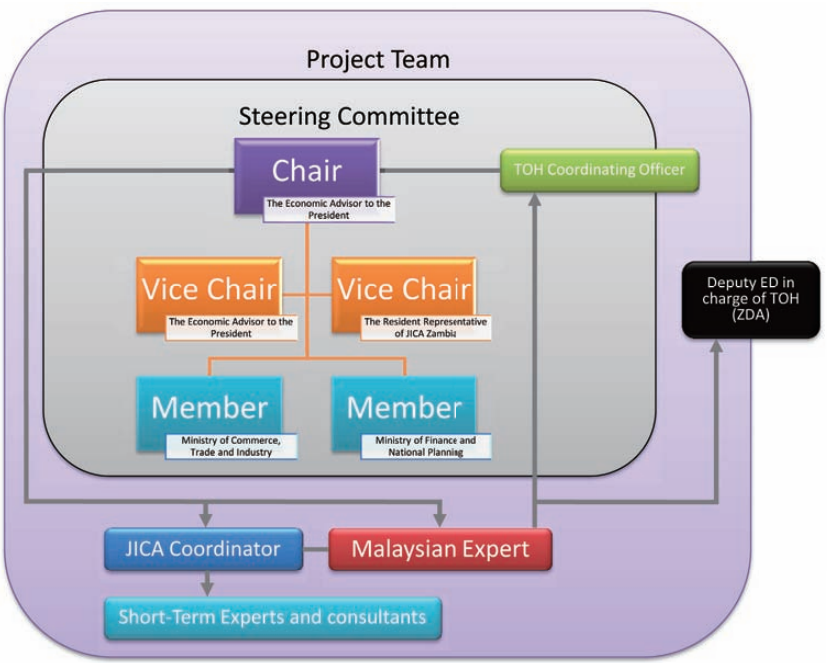
In 2006, a new project titled "the Triangle of Hope, Strategic Action Initiative for Economic Development (ToH SAIED)" began in order to support Zambia's ToH programme and monitor the 12 ToH Action Agendas. The main activities were 1) to establish a monitoring system of the 12 Action Agendas and other related activities and to improve the policy framework for the development of investment environments, 2) to prepare and disseminate necessary information on Zambia's investment environments to prospective investors (e.g. booklets, websites, promotion activities), and 3) to prepare the implementation of administrative infrastructure (e.g. Clients' Charters). The approval and implementation of actual investment projects were the GRZ's responsibilities. It also continued to act to enhance the understanding of the concept of the ToH among stakeholders – such as high-ranking

[20] The ZDA was established in 2007 by the merger of five institutions, including the Zambia Investment Center (ZIC), one of the first counterparts of the ToH SAIED. It was about 2008 that the ZDA came to function after the allocation of a certain number of staff members.

government officials, politicians, and those in the private sector – through training and workshops.

The ToH SAIED was implemented under the coordination of the Steering Committee mentioned above, with support from five Malaysian experts as technical advisors, one of whom was Mr Jegathesan.

Figure 1: The Structure of the ToH SAIED (as of 2008)[21]



Phase II 2009-2012: The development of the capacity of the ZDA

Right after the completion of the ToH SAIED, a new project titled the Zambia Investment Promotion Project – Triangle of Hope – (ZIPP-TOH) started. It mainly aimed to strengthen the capacity of the ZDA together with other line ministries in order to effectively promote investment in Zambia. The ZDA was expected to play a central role in investment promotion activities in cooperation with other line ministries and the

[21] Modified by the author (Figure 6 in JICA 2008, p. 12). After Dr. Musokotwane, the Chair of the Steering Committee, had been transferred to the State House as the economic advisor to the President in a personnel reshuffle during the project, he came to play a role of the Chair, doubled as a Co-Chair.

private sector. However, it was not functioning well due to its organisational fragility and the lack of practical experiences among the staff, which prevented them from gaining trust from the private sector.


A business seminar at Malasia

In the ZIPP-TOH, various activities were conducted for the development of institutional and individual capacities for better promotion of investment. For instance, investment promotion tools, such as investment promotion booklets, sector and sub-sector profiles, product profiles, were prepared and/or revised. Information on investment procedures and target countries was compiled to provide better services to investors. It also aimed to improve the collaboration in investment activities among the MCTI, the ZDA, other ministries, and the private sector through periodical dialogue, information exchange, and other activities. In the latter half of the project, on-the-job training through day-to-day activities in the ZDA was introduced for capacity development of individual staff members. Training of trainers was also conducted. Simultaneously, the monitoring of the ToH Action Agendas continued. The Malaysian experts constantly assisted the monitoring activities and provided advice for necessary policy reforms.

2-3 Changes in Zambia and a Future Task

As the result of emphasising the importance of the integration of the three forces, 'political will,' 'civil service efficiency,' and 'private sector dynamism,' the investment climate in Zambia has been improving, though it is still premature to measure ToH's impact on the Zambian economy. The World Bank's annual report, *Doing Business 2011*,[22] ranked Zambia in the top ten countries to have improved investment climate and introduced policy changes. The improvement of Zambia's investment climate is currently attracting FDI. The interest of Japanese companies in Zambia is also rapidly increasing recently. In Zambia investment seminars[23] held in Japan (Tokyo and Osaka) in July 2012, more than 170 companies attended. According to interviews and a survey among international corporations, economic associations, and

[22] IFC 2010, p. 5.

[23] These seminars were organised by the UNIDO Investment and Technology Promotion Office (ITPO), Tokyo, and the JICA.

foreign investors in Zambia, they felt that Zambia's investment climate and ZDA's services have improved.[24] This section explains some results to which the above two projects contributed to some extent.

The development of economic and business environments
Various activities for improving the investment climate have been conducted by the GRZ. More than half of the one hundred activity items[25] set under the Action Agendas have been (and are going to be) implemented. In addition, the ZDA Client Charter, of which ZDA staff members had prepared a draft in a workshop, was published. Other governmental institutions (e.g. the Zambia Revenue Authority, the Department of Immigration) also formed their Client Charters.

Many investment promotion tools were prepared and distributed at seminars, workshops, by investment promotion missions to other countries, and at meetings with investors visiting Zambia. For instance, in cooperation with the government and the private sector, a number of sector and product profiles, and user manuals have been published and/or revised and distributed among prospective investors within and outside Zambia. As of June 2012, there were six general investment promotion materials ready for reference (e.g. *Zambia's Investor Guide, Zambia, Africa's New Frontier for Investments and Profits*), two manuals for applying investment licenses, eight sector profiles (agriculture, energy, mining, manufacturing, infrastructure, education, health, tourism), four sub-sector profiles (agro-processing, mineral beneficiation, copper fabrication, iron and steel), and two product profiles (computers, leather and leather product). Most of them were prepared by working groups consisting of ZDA staff members. These investment tools are updated annually and are available on the ZDA website.

Regarding the E-Governance system introduced by Mr Jegathesan, the Ministry of Communication and Transport is preparing its basic design with support from UNDP.

Investment promotion activities and the development of the ZDA's capacity
An important feature of the projects, particularly the ZIPP-TOH, is its

[24] JICA 2012, p. 7.

[25] More than two hundred activity items, which were originally set under the ToH Action Agendas, were organised and reduced to one hundred after the mid-term review of the ZIPP-TOH in June 2011.

on-the-job capacity development of the ZDA and its staff members through their participation in actual investment promotion missions. Taking advantage of the professional networks of Mr Jegathesan, a number of investment promotion missions were organised to India, Malaysia, Thailand, South Africa, and Japan. During the missions, a number of investment promotion seminars were held. With the support of the ZDA, Zambian companies prepared about thirty joint venture proposals. By sending these missions as well as by receiving investment missions from other countries, the ZDA could obtain direct feedback from prospective investors and learn of their expectations.

These activities have resulted in nine investment projects in various sectors, most of which are FDI from Malaysia and India (including joint venture with Zambian companies), having been officially approved. Over thirty projects are currently under negotiation.

The Diversification of Zambia's Economic Structure

These activities of improving the investment climate have helped to shed light on potential sectors other than copper, particularly in non-traditional sectors (e.g. tourism, education, health, information and communications, and finance). Until recently, the private sector was not involved in these sectors in which the central government had been expected to take initiative in the socialist era.[26] However, with the advice of the Malaysian expert, the successful promotion activities in these non-traditional sectors resulted in increasing FDI and contributed to the diversification of sectors for private investment. This trend has been sustained by enhancing the common understanding of the ToH concept among stakeholders.

A mobile phone factory

Investment projects are emerging in the information and communications and the health sectors, for instance, through international business promotion meetings in Malaysia and India. In the education sector, regulations were revised in order to enable national universities to conduct business on a commercial basis, which lead to serious

[26] JICA 2008, p. 8.

discussions on joint ventures between national universities in Zambia and international corporations.[27] Several projects have been realised or are in the process toward realisation, such as a mobile phone manufacturing factory, an information and communication college, and a high-tech hospital.[28]

Remaining tasks and the future of Zambia's ToH

The continual implementation and monitoring of the ToH Action Agendas are important for the further economic development of Zambia. For this purpose, the ZDA needs to develop its internal system, such as training, in order to disseminate and utilise skills and knowledge obtained by its staff members, who had participated in investment promotion activities. This would sustain (and improve) the capacity of the staff members and enable the ZDA to continue improving investment environments and supporting investors. In addition, Zambia's ToH and its related activities have been being harmonised with the PSDRP and continuing even after the completion of the ZIPP-TOH. In this sense, the continual implementation and monitoring of the Action Agenda are also vital.

3. The Learning Process

This section looks at some factors that have contributed to the positive progress of the project thus far.

3-1 Key Factors

(1) Fostering ownership with shared visions

A key to the success of Zambia's ToH is to secure that the concept of the ToH and its visions are shared among various stakeholders, from the President to those in the private sector. A number of briefings and workshops were repeatedly organised. The Malaysian expert provided important advice to ministers. MoFNP, for instance, was advised about the overall policy of investment promotion, preferential tax and other incentive treatment for investors, and individual investment projects. Other ministers were advised about ways to attract investors to their sectors, from the policy level to the individual project level.

As a result of this, a high-level commitment was developed. The leadership of the Steering Committee with the strong commitment of Dr.

[27] JICA 2008, p. 21.

[28] JICA 2008, p. 21.

Musokotwane, the economic advisor to the President, made it possible to form and monitor the 12 ToH Action Agendas by coordinating concerned ministries; complex issues requiring the commitment of many governmental institutions were implemented swiftly. In addition, the top-management of the ZDA was very active in ToH related activities. It was, however, observed that the robust top-down structure of the Committee sometimes resulted in undermining the feeling of ownership among other stakeholders, particularly that of line ministries.

(2) Change drivers

Several factors have worked as drivers of change in this exercise.

Promotion of Asia-Africa cooperation

The emphasis of the importance of Asia-Africa cooperation in the TICAD III created a favourable atmosphere for Zambia, whose economy had been faltering and was searching for ways to diversify their economic structure. The joint mission of Japan and Malaysia to Africa resulted in bridging the two countries together, Malaysia and Zambia.

Powerful examples of Malaysia's experiences

Relatively fresh experiences of economic development of Malaysia, which had successfully changed their economic structure and achieved rapid economic development, were instrumental in stimulating and motivating Zambia to undertake economic development with the support of Malaysian experts. Mr Jegathesan, who used to work for the MIDA in Malaysia as the Deputy Director General in the middle of the development process of the country, played a key role in bringing Malaysia's experiences and know-how to Zambia. The GRZ directly was able to learn the ways in which the GOM had promoted the policy of introducing FDI and changed the country's economic structure.

Timely start of the projects

The timely start of both projects, the ToH SAIED and the ZIPP-TOH, facilitated Zambia's ToH. The GRZ could obtain effective and timely advice from the Malaysian expert, right after the preparation period of 2004-2006, during which the Zambian governmental stakeholders had developed strong interest in the concept of the ToH.

(3) Learning in the process

The two projects were designed to highlight the process of learning

through the implementation of related activities both on theory and practice. This enabled the GRZ to obtain interactive feedbacks between the policy level and the implementation level.

Malaysian experiences were effectively modified and utilised for Zambia at both levels. At the policy level, some practical ideas were suggested by the Malaysian expert to the GRZ. One example was an idea of streamlining governmental services for making investment in Zambia competitive and providing incentives to the private sector.[29] This idea was transformed into the 12 Action Agendas and one hundred activity items through discussions in each Task Force. Together with the monitoring process in the Steering Committee, this process of internalising foreign expert's advice was a learning process for the GRZ.

Similar processes of learning were observed at the implementation level. Some of investment promotion tools were prepared by adapting and modifying the ones which Malaysia had developed during their economic reform. For instance, *Zambia's Investor's Guide and Cost of Doing Business* were made with reference to the materials published by the MIDA.

In addition, on-the-job training before, during, and after investment promotion missions to other countries enabled the ZDA staff to learn and develop skills under the instruction of the Malaysian expert. Such skills were related to, for instance, the organisation of missions, the preparation of presentation, the effective use and distribution of missions also included staff members of the private sector. These skills promotion materials, and follow-up activities. Investment promotion and knowledge could be used for receiving missions from other countries. Additionally, one Japanese expert provided daily on-the-job training by giving more detailed advice for the ZDA staff to improve their everyday services.

ZDA had several channels of feedback in the process of providing services; for instance, they received feedback from staff members taking care of investors, from stakeholders of the government and the private

[29] From the Summary Table (JICA 2008).

Box 2: Investment Promotion Missions as Practical Training[30]

The participants of investment promotion missions, such as ZDA staff members and Zambian private companies, were able to learn lessons from various activities for successful promotion (i.e. preparation, implementation, follow-up) to professional attitudes under the instruction of Mr Jegathesan. In the beginning, Zambian participants, without much practical experiences in investment promotion, tended to get confused when they received a number of questions from Asian investors. Mission members sometimes had a hard time convincing the potential investors that the GRZ was doing its best to maintain law and order for those investors, whose biggest concern usually was security. Through these experiences, Zambian counterparts directly understood the difficulties of inviting FDI and accumulated basic knowledge on what was expected of them from investors and how to attract investors.

A business meeting between the ZDA and a Malaysian company at Malasia

sector on the draft sector profiles prepared by them, and from the participants of investment promotion missions and seminars.[31] Through these feedback channels, what they learned in the practical level could be brought back to the policy level.

(4) Coordination with other programmes

The GRZ did not receive financial support from JICA for their ToH programme. JICA's support was only to provide technical support for the GRZ to implement the programme. Dr. Musokotwane, the chair of the Steering Committee, sometimes made necessary coordination between their ToH programme and the PSDRP, and obtained funding for the former.[32]

[30] Fukuda 2009.

[31] JICA 2012, p. 7.

[32] This coordination was smoothly conducted particularly during the time when Dr. Musokotwane played the roles of the both chairs of the PSDRP and the ToH (JICA 2008, p. 9).

3-2 Key Roles of Malaysia and Japan

(1) Respecting the ownership of the beneficiary country

For the Japan and Malaysia's cooperation for Zambia's ToH programme, the assistance of Mr Jegathesan was important. His rich experiences accumulated through his service at the MIDA during the economic development of Malaysia was the source of strong support for forming and realising the 12 ToH Action Agendas in the ToH SAIED and the ZIPP-TOH projects. In cooperation with the government of Malaysia, which strongly promoted South-South Cooperation, and private corporation associations, together with the Malaysian expert's professional networks, the GRZ could successfully send and receive investment missions to and from Malaysia.[33] However, what is notable is that the two projects only supported part of activities related to Zambia's ToH programme, but did not take over their works. In the preparation period, the Malaysian expert provided advice to the task forces (and the Steering Committee later), while emphasising the GRZ's ownership. He made them work out their problems on their own. Later, this relationship became more pronounced. When the ZDA staff members had developed their capacities to conduct investment promotion missions, the Malaysian expert let the Zambian side implement and manage missions almost entirely.[34]

(2) Effective combination of Malaysian and Japanese experts over time

Japan/JICA played the role of catalyst in the formation of the cooperation between Malaysia and Zambia. JICA had strong connections to both countries. Due to the long cooperation with them, the idea of applying Malaysia's highly relevant experiences and know-how to Zambia emerged. A joint mission of Japan/JICA and Malaysia to Zambia made a bridge between Malaysia and Zambia. Moreover, it was very efficient and effective to recruit Mr Jegathesan as a Malaysian expert, who had rich experiences in MIDA and a strong connection with prospective investors in Malaysia and India. The expansion of investment sectors to non-traditional ones, such as health and education, was also derived from his experiences in Malaysia. His long-term commitments throughout the two projects greatly contributed to support Zambia to implement ToH related activities.

[33] JICA 2008, p. 21.

[34] JICA 2012, p. 8.

Moreover, where necessary, the inputs of Japanese experts brought synergistic effects for Zambia's ToH from time to time. For example, when it was necessary to expedite the progress of ZDA's capacity development, Japan immediately arranged the dispatch of a Japanese expert specialised in training of investment promotion activities. There was a broad division of labour between the Malaysian and Japanese experts: the former provided guidance on 'what' to do, while the latter on 'how' to implement it.[35]

4. Implications

This case study provides some implications for future effective cooperation.

Validity of Asian experiences for Africa and the potential future business

This experience indicates the possibility that Asian experiences can have some relevance for African countries. Some Southeast Asian countries, particularly those who became middle income countries, have similar experiences in having to overcome economic weakness by learning from other advanced countries, and applying these experiences to their different socio-cultural-economic environments. Like Malaysia, some experienced economic development through investment promotion by inviting FDI under the strong government initiative. If such exchanges are developed, Asia-Africa cooperation may create business opportunities for participating countries.

Political high-level commitment

The commitment of high-level stakeholders became a driving force for realising Zambia's ToH programme. This commitment was based on the shared understanding of the concept of the ToH, which had been fostered and intensified through repeated briefings and workshops since the preparation period. This approach was based upon the experiences of the Malaysian expert, who had learned the importance of inviting investors under the strong government initiative.[36]

Capacity development: Learning by doing

It was extremely effective to provide opportunities for developing and strengthening the capacity of individual ZDA staff members and the ZDA as an organisation, not only through training for transferring

[35] JICA 2011, p. 12.

[36] JICA 2008, p. 31.

knowledge and skills, but also through the implementation of actual investment promotion missions. They learned both from the successes and failures of such missions, which helped them to build self-confidence.

Harmonisation among various projects

The GRZ and donors in the private sector development have long recognized the need for strengthening the coordination and harmonization of programs and projects in the sector.[37] In addressing the issue, the GRZ has started to take leadership in deepening harmonization and coordination between the two programmes of ToH and PSDRP through closer communication and the information exchanges over the last few years. Although the exercise is still on-going, reasonable improvements in terms of the complementarity of the two programmes have already been reported. Such closer communications among stakeholders and international donors is important to further improve the effectiveness of cooperation in the sector.

Flexible management of the projects and combination of different types of knowledge

The flexible framework of the projects, particularly that of the ToH SAIED, proved effective in making use of the various ideas of the Malaysian expert. He made available the broad range of ideas based on his Malaysian experiences and helped to adapt them to the country and sector context. In the ZIPP-TOH, his advisory activities were complemented by Japanese experts, who provided timely and practical advice to the ZDA staff in the form of on-the-job training. The ideas of the Malaysian expert indicated some directions of Zambia's ToH programme, while the practical daily advice of the Japanese experts helped the realisation of the former's ideas. Flexible management and an effective combination of different types of knowledge are effective for this kind of cooperation.

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Case 4

Flexible Cooperation for Indonesia's Multi-dimensional Challenges for South-South Cooperation under a Shared Vision

Yukimi Shimoda and Shigeki Nakazawa

1. Introduction

Indonesia is currently taking a path towards becoming a robust partner for providing effective South-South and Triangular Cooperation (SSC/TrC). Current international and national trends have been strongly supporting their endeavours. By tracing Indonesia's efforts to develop and strengthen the capacity to implement need-oriented, effective SSC activities, this case presents the way in which the international community, with a particular focus on the Japan International Cooperation Agency (JICA), has been supporting them.

Since the late 2000s, line ministries of the Government of the Republic of Indonesia (GOI), particularly the National Development Planning Agency (BAPPENAS), the Ministry of Foreign Affairs (MOFA), the Ministry of Finance (MOF), and the State Secretariat (SEKNEG), have been cooperatively working for promoting effective SSC/TrC. Although it would be premature to make a decisive evaluation, significant balanced results have been emerging from the policy level to the practical level. The major advancement comprises the formation of drafts of the Grand Design and the Blue Print as a policy framework, progress in the development of human resources, and the application of the policy framework to actual pilot projects.

In so doing, the GOI has been sharing a vision for the future direction of Indonesia's SSC/TrC with a wide range of stakeholders from line ministries to international donors and NGOs. This shared vision fostered through face-to-face regular interactive dialogues among stakeholders is the most prominent means that has helped to harmonise various activities and support Indonesia's challenges for effective future SSC/TrC.

This paper first describes the background and process of this cooperation. Secondly, it presents the notable results of various activities and identifies several key factors that have led to achievements. Finally, this paper considers certain implications regarding future cooperation to support prospective providers of SSC/TrC activities.

2. Towards Harmonised Cooperation

2-1 International and National Momentum for South-South and Triangular Cooperation

(1) Brief history of Indonesia's South-South Cooperation

The history of South-South Cooperation (SSC) in Indonesia can be traced back to the Asia-Africa Conference held in Bandung, Indonesia, in 1955. This conference played an important role for enhancing mutual cooperation among developing countries, which was exemplified by the establishment of the Non-Aligned Movement in 1961 and the Group of 77 in 1964. One of the outcomes of their cooperation was establishment of the Non-Aligned Movement Centre for South-South Technical Cooperation (NAM-CSSTC) on the initiative of Indonesia and Brunei Darussalam in 1995, in order to accelerate development in the developing countries.[1]

After 1978 when the Buenos Aires Plan of Action (BAPA) came to underpin the importance of technical cooperation among developing countries (TCDC) and support the promotion of SSC, the GOI started implementing various technical cooperation activities in 1981. It formed the Indonesian Technical Cooperation Program (ITCP) approved by a Presidential Decree, under which four institutions (known as the 'four legs') took charge of ITCP.[2] They were BAPPENAS, MOFA, MOF, and SEKNEG.[3] ITPC aimed to share Indonesia's experience and knowledge of development through training programs and the exchanges of experts, with support from other countries and international donors.[4] The Triangular Cooperation (TrC) of Indonesia and Japan, through JICA, also began in various sectors, when they provided supplemental training for Low-Cost Housing training in Japan in 1981. Particularly, since the 1990s, Japan's/JICA's role in Indonesia's

[1] NAM-CSSTC, n.d.

[2] JICA 2010a, p. 52.

[3] It was known as the Cabinet Secretariat (SEKAB) at that time.

[4] JICA 2010a, pp. 72-73.

SSC/TrC has been active.[5] Until now, the GOI has provided training and apprenticeship programs, and scholarship grants to more than 4,000 participants from countries in Asia, the Pacific, Africa and Latin America and has dispatched experts.[6]

(2) Structure of South-South and Triangular Cooperation in Indonesia

The institutional and funding structures of SSC/TrC in Indonesia are complex due to the existence of many stakeholders. In 1982, with the support of the United Nations Development Programme (UNDP), the Coordinating Committee for International Technical Cooperation, whose members included the aforementioned four institutions, was established under a Presidential Decree in order to conduct the necessary technical and administrative coordination for SSC/TrC across more than ten governmental departments and institutions.[7] However, the structure of ministries and government agencies has been changed over time. Currently, regarding technical cooperation, SEKNEG has responsibility for multilateral cooperation with developed countries and international donors, while MOFA is in charge of bilateral cooperation.[8] Technical cooperation is also implemented by various ministries, government agencies, universities, and non-governmental organizations (NGOs). The Ministry of Education and universities are, for instance, in charge of educational cooperation. On the other hand, economic cooperation, namely the Economic Cooperation among Developing Countries (ECDC), is managed by the Ministry of Trade, the Ministry of Industry, and the Indonesian Chamber of Commerce.[9]

The funding of Indonesia's SSC/TrC comes from state budgets and aid from other countries and international donors spread into line ministries and implementing agencies. The state budget is, for instance, used for matching funds through SEKNEG and for full funding through MOFA.[10] However, the GOI, which does not have a separated fund for SSC/TrC, relies heavily on funding from other countries and international donors.[11] Germany, through the Deutsche Gesellschaft für

[5] JICA 2010a, p. 81.

[6] Coordination Team 2011a.

[7] JICA 2010a, pp. 72-73.

[8] JICA 2011a, p. 6.

[9] JICA 2010a, pp. 77-78.

[10] JICA 2010a, p. 81. Scattered budgets were also embedded into the state budget of line ministries.

[11] JICA 2010a, p. XIII.

Internationale Zusammenarbeit (GIZ), has provided scholarships to those from Timor-Leste who participate in a program in Indonesia.[12] Like UNDP, which has been actively assisting Indonesia's South-South and Triangular Cooperation, there are also many international donors who have provided financial support for Indonesia's SSC/TrC in their specialised sectors.[13] For instance, the United Nations Population Fund (UNFPA) and the Food and Agriculture Organization (FAO) have been providing assistance for the GOI's technical cooperation in the sectors of family planning and agriculture respectively, which were flagship programs in the 1990s.[14] The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) has supported disaster training programs.

(3) International and national initiatives for SSC/TrC

Recently, a new momentum for Indonesia's SSC/TrC has been brought by their emergence as a global economic and political player in the world. In reflection of their quick economic recovery after the Asian Financial Crisis in 1997, Indonesia became a member of Group 20, the sole Southeast Asian member, in 2009.[15] G20 membership brought Indonesia a larger global economic and political responsibility. Indonesia also became the chair country for the Association of Southeast Asian Nations (ASEAN) in 2011.

The endorsement of international initiatives, such as the Paris Declaration on Aid Effectiveness in 2005 and the Accra Agenda for Action in 2008, highlighted Indonesia's global responsibility. These initiatives have come to shed light on SSC/TrC as a means of assisting the enhancement of aid effectiveness for the purpose of achieving economic and human development among developing countries.

Under these circumstances, in 2009, the GOI signed the Jakarta Commitment adopted by 26 development partners. Its roadmap to 2014

[12] JICA 2010a, p. 81.

[13] JICA 2010a, pp. 81-82.

[14] In 2009, Indonesia and the FAO signed a Letter of Intent on the programmes and technical cooperation in agriculture, which focuses on South-South Cooperation as a follow-up to the discussions between the FAO and Indonesia during the High-level Conference on World Food Security in 2008. Through this cooperation, the former provides the latter experts and technicians, as well as tools and equipment, to improve the productivity of small-scale farmers in developing countries (FAO n.d.).

[15] G20, a forum of finance ministers and central bank governors from major economies, was set up to discuss important issues related to the international financial system.

and beyond is structured to implement the agenda for the international aid effectiveness based upon the Paris Declaration and the Accra Agenda for Action, by effectively utilising external assistance in line with its national development priorities. As one of the commitments, it clearly declares strengthening 'regional processes and institutions facilitating South-South cooperation' for financial and technical assistance.[16] As a means to execute the Jakarta Commitment, the GOI formally established the Aid for Development Effectiveness Secretariat (A4DES) with the intention of taking full ownership and leading aid coordination and management processes.[17] International donor support for the A4DES includes the Australian Agency For International Development (AusAID) and the United States Agency for International Development (USAID) for the establishment of the Secretariat; the Canadian International Development Agency (CIDA) and UNDP for the survey on Aid Effectiveness in 2008, preparation of the Jakarta Commitment, and training on Aid Effectiveness; and UNDP for the facilitation of establishing a multi-donor Aid for Development Effectiveness Programme for the capacity development of Indonesia in order to strengthen its country systems.[18] The six working groups under A4DES were joined by various international donors, such as AusAID, USAID, and The Federal Ministry for Economic Cooperation and Development (BMZ).[19] JICA is active in all six working groups, including the Capacity Building and Knowledge Management Working Group in charge of SSC.

The high-level meeting in Bali

The GOI, in cooperation with JICA, the World Bank (WB), and UNDP, also organised a High-Level Meeting, 'Towards Country-Led Knowledge Hubs', held in Bali in July 2012, in order to discuss the importance of establishing knowledge hubs (core countries and institutions for knowledge exchanges) and networking these for the future development of SSC / TrC.

[16] *Jakarta Commitment*, pp. 4-5.
[17] A4DES 2011, and Coordination Team n.d., p. 12.
[18] UNDP n.d.a and UNDP n.d.b.
[19] A4DES 2009, p. 3.

Meanwhile, to realise Indonesia's role in the international community became one of the national development missions stated in Law No. 17/2007 on the National Long-Term Development Plan (RPJPN) 2005-2025.[20] SSC was also included in the National Medium Term Development Plan (RPJMN) 2010-2014.[21]

Thus, the recent international and national trend of promoting SSC/TrC has brought about external and internal expectations and pressures to the GOI, which have further accelerated the process of Indonesia's becoming a pivotal country.

2-2 Balanced Approach for SSC/TrC towards Effective Development

(1) Beginning of harmonised cooperation

With the strong push and pull factors mentioned above, it became imperative tasks for the GOI to formulate policy frameworks and restructure its complex implementing mechanism towards the implementation of more effective SSC. Many international donors have been moving faster to provide support for the GOI's endeavours of effective SSC/TrC. For instance, UNDP has supported BAPPENAS through the Enhancing Capacity for Better Aid Management project (ECBAM-UNDP), as a continuation of which it is currently planning a new project, so-called the Strengthening Innovative Partnership for Development Cooperation. WB has facilitated south-south knowledge exchange through the Global Distance Learning Network (GDLN) more than ten years in many countries, including Indonesia, and more recently through The South-South Experience Exchange Facility.[22] GIZ supported the formation of the Aid Information Management System (AIMS).[23] GIZ and the Asian Development Bank (ADB), together with the GOI, organised the workshop "Triangular Cooperation: Towards Horizontal Partnership, But How?' among practitioners and policy-makers of the Asian region in 2011, as part of the preparation for the 4th High Level Forum on Aid Effectiveness (HLF-4) held in Busan in 2011.

In relation to Japan, the Japan-Indonesia Partnership Program (JIPP) set up a political framework for SSC/TrC in 2003, under which annual

[20] JICA 2010a, p. ix and BAPPENAS 2010, p. I-23.
[21] JICA 2010a, p. ix and Coordination Team n.d., p. 12.
[22] WB n.d. and WBI n.d..
[23] BAPPENAS n.d..

meetings have been held.[24] In the Southeast Asian region, JICA has been making efforts to facilitate SSC/TrC among Southeast Asian countries through the Japan-Southeast Asian Meeting on South-South Cooperation (J-SEAM), which evolved from a mechanism known as the JICA-ASEAN Regional Cooperation Meeting (JARCOM).[25]

The Workshop on South-South Technical Cooperation

As part of these trends, a workshop on South-South Technical Cooperation was organised in March 2009. In cooperation with MOFA, SEKNEG, NAM-CSSTC, and JICA, this workshop resulted in revealing key issues for Indonesia's SSC/TrC. Almost 200 participants were invited from various key organisations, such as the line ministries, international donors, embassies, universities, and NGOs. They discussed the future direction of Indonesia's South-South technical cooperation by examining technical cooperation activities Indonesia has implemented. Overall, the workshop helped to identify the areas Indonesia would need to tackle for effective SSC. Later, the areas were categorised into three pillars directing their activities: 1) mainstreaming SSC in the National Policy, 2) enhancing human resources for international cooperation, and 3) improving the quality of SSC.

Figure 1: The three Pillars for the Development of Indonesia's SSC[26]

[24] Germany also has partner countries, namely Anchor countries, such as China, India, Indonesia, Pakistan, Thailand, Egypt, Iran, Saudi Arabia, Nigeria, South Africa, Argentina, Brazil, Mexico, Russia, and Turkey (Hoven & Kanera 2004, P. 4).

[25] JARCOM aimed to formulate and implement well-prepared, needs-oriented south-south technical cooperation and to improve the quality of SSC among the member countries, including Indonesia.

[26] JICA 2011a, p. 9.

(2) Focusing on the process of various activities under the three pillars

Activities to support Indonesia's challenges for effective SSC/TrC were not being conducted in a systematic manner at the very beginning. In the case of JICA, related activities were rather flexibly conducted on an ad-hoc basis, responding to requests and needs from the GOI. They had been gradually converged and shaped into a broad structure of support for strengthening Indonesia's SSC/TrC coherently under the three pillars shown in Figure 2.

Figure 2: JICA's Activities under the Three Pillars

First pillar: SSC in national policy

Two important studies were requested by BAPPENAS: 'Policy Direction on Indonesia's South-South Cooperation' (hereafter referred to as 'Policy Study') and 'Basic Study for South-South Cooperation (Draft Grand Design and Blue Print)' (hereafter referred to as 'Basic Study'). The Policy Study provided useful suggestions for future directions of Indonesia's SSC, which were derived from five concerns: 1) legal basis, 2) institutional framework, 3) funding mechanism, 4) the involvement of wider stakeholders, including NGOs and private sector, and 5) comprehensive monitoring and evaluation mechanism.[27]

Before the Basic Study was conducted, there was considerable motivation in the GOI to establish an independent institution responsible for coordinating and implementing SSC,[28] which the Policy

[27] JICA 2010a, pp. VII-XV.

[28] Hearing from the JICA Indonesia Office.

Study also identified.[29] However, the discussion between the GOI and JICA resulted in highlighting the importance of clarifying visions and missions of Indonesia's SSC/TrC prior to the establishment of such an institution. Thus, the Basic Study was designed to facilitate the GOI's formulation of a Grand Design and a Blue Print as their policy frameworks of SSC. Several meetings and workshops under the framework of the Basic Study were organised with ECBAM-UNDP. Other international donors, such as GIZ and the Asian Development Bank Institute (ADBI) also participated in these.[30]

After drafting the Grand Design and the Blue Print, a series of follow-up studies and projects were conducted. 'A Comparative Study on The Management of South-South Cooperation in Indonesia, Brazil, Thailand and Japan Cases' was also accomplished in 2011-2012 for the better management of SSC. In March 2012, the technical project 'Project on Knowledge Management for South-South Cooperation (KM-SSC)' started in support of developing Indonesia's capacity to promote SSC through identification of the comparative advantage of Indonesia for SSC, using knowledge management skills based upon the SECI Model.[31]

Second pillar: HRD and quality improvement

Concurrently, the GOI has been making efforts to develop human resources among stakeholders and to improve the quality of SSC/TrC. For instance, Indonesian government officials participated in the JICA training course (in Japan) 'Strengthening for Implementation Capability of Development Training under South-South Cooperation' from 2010.[32] This training for persons in charge of the planning, implementation, and evaluation of training programs under SSC in their countries was aimed to develop capacities for improving training quality. Lecturers were invited from JICA and also from InWEnt (currently GIZ), UNDP, and

[29] JICA 2010a, pp. IX-XIII.

[30] JICA 2011b, p. S-2.

[31] The SECI Model consists of four steps: 1) Socialisation, 2) Externalisation, 3) Combination, and 4) Internalisation, which guide the process of interactions between tacit and explicit knowledge (Nonaka et al 2008, pp. 18-19). Through this process, new knowledge will be created.

[32] This training was planned based on discussions in the High Level Retreat on the Effectiveness of International Development Training organised by the World Bank Institute (WBI) and the Capacity Building International, Germany (InWEnt: Internationale Weiterbildung und Entwicklung) on 4-5 June, Berlin, which had confirmed the importance of enhancing the effectiveness of training implemented in developed countries, as well in developing countries.

the International Training Centre of the International Labour Organization (ITC-ILO).

Prior to the training, each participant was requested to prepare an action plan in order to improve the international training programs in their respective countries.[33] This consequently led the GOI that felt the necessity of evaluating their training programs in the process of preparing an action plan, to develop an evaluation guideline for better implementation of their SSC/TrC. With the support of the JICA Indonesia Office, the GOI conducted three follow-up activities in order to realise their action plan: 1) to deepen understanding of the evaluation mechanism, 2) to form a guideline for the evaluation mechanism, and 3) to promote the enhancement of understanding of the guideline among stakeholders and educate (future) evaluators.

Third pillar: Application to projects
Running parallel with activities under the first and second pillars, actual development projects have been undertaken and will continue to be implemented, providing assistance for the development of beneficiary countries in Asia, South Pacific, Middle East, and Africa, based on specific country needs in the forms of training, despatching experts, and conducting workshops. In doing so, the GOI would be able to utilise knowledge and skills brought about by the studies, workshops, and seminars supported by JICA and other donors.

2-3 Consequence of Harmonisation

Indonesia's challenges are still on-going and concrete outcomes remain to be seen. The main progress of a series of activities under each pillar is described below.

Under the first pillar – formation of a policy framework
The outcomes of the Policy Study were shared among a wide range of stakeholders, from line ministries and international donors (e.g. JICA, UNDP, and GTZ) to NGOs in the National Seminar in July 2010, which was funded by JICA and ECBAM-UNDP.[34] The notable result of the

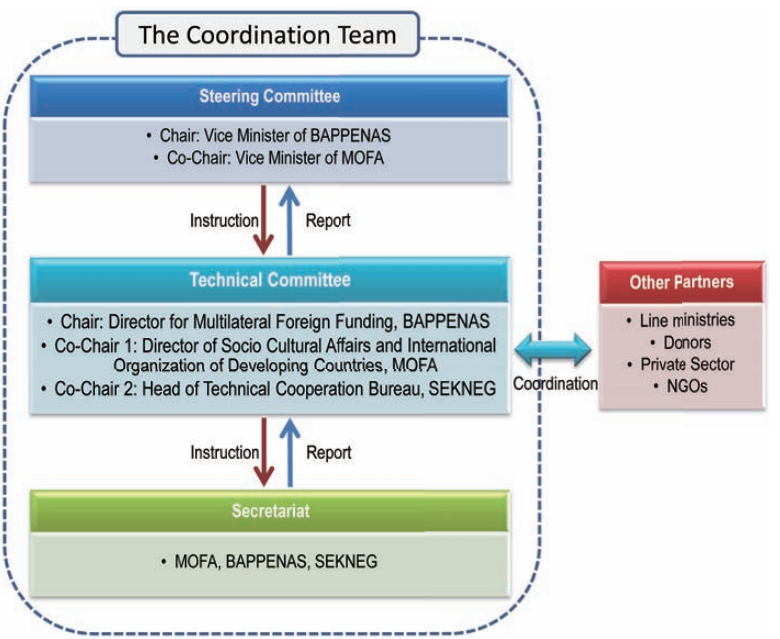
[33] The submission of an action plan has become one of common activities in JICA training after the reformation of training programs in the mid-2000s. The actual implementation is not mandated.

[34] JICA 2010a, p. Attach-1. The GOI, JICA, and ECBAM-UNDP had been working jointly since the start of the Policy Research. As of 2012, the ECBAM project completed its activities (hearing from the JICA Indonesia Office).

The National Seminar

National Seminar was establishment of the Coordination Team on South-South and Triangular Cooperation that was expected to be responsible for promoting and developing Indonesia's strategic SSC working in coordination with other line ministries.[35] Its core members were BAPPENAS, MOFA, SEKNEG, and MOF. The Coordination Team, officially approved by a ministerial decree of BAPPENAS,[36] is currently the only institutional framework coordinating among the stakeholders of Indonesia's SSC, since the A4DES virtually completed its missions after the Busan HLF-4.

Figure 3: Structure of Coordination Team[37]



[35] JICA 2011b, p. Chap. 1-1.

[36] With the support of JICA, the Coordination Team later published the directory, 'Indonesia's Capacities on Technical Cooperation', as an attempt at analysing the areas where Indonesia's implementing agencies demonstrated their strength.

[37] Coordination Team 2011b (modified by the authors). As of August 2012, the chair of the Steering Committee was the Minister of BAPPENAS.

The Basic Study produced the drafts of the Grand Design 2011-2025 and the Blue Print 2011-2014.[38] In accordance with the period of the RPJPN 2005-2025, the targets and time frame of the Grand Design were divided into three periods: 1) Period I 2011-2014 for consolidation of Indonesia's SSC through, for instance, the formation of the legal framework and the strengthening of the institutional coordination; 2) Period II 2015-2019 for the strengthening and expansion of SSC by enhancing the involvement of all stakeholders, including the private sector, NGOs, and universities; 3) Period III 2020-2025 for the further strengthening and expansion of SSC.[39] The Blue Print aimed to realise the targets of Period I. These two drafts have been submitted in 2011 and are currently in the process of being officially approved as a presidential regulation.[40] Other international donors also have assisted (and will assist) the formation of the policy framework: WB has provided their comments on the drafts and UNDP is considering support for the preparation of related regulations.[41] If the Grand Design and the Blue Print become legitimised, Indonesian stakeholders will obtain a legal basis for the implementation of SSC. The establishment of the Coordination Team and the formation of the political frameworks will reshape the coordinating mechanism of Indonesia's SSC.

Meanwhile, the obtained knowledge (e.g. other countries experiences) and skills (e.g. knowledge management) through the Comparative Study and the KM-SSC technical cooperation project are expected to strengthen Indonesia's capacities for more effective managing and promoting their SSC over time. The KM-SSC has in fact just started and will continue until May 2013. Furthermore, the Coordination Team is now discussing with JICA Indonesia a new technical cooperation project, the Capacity Development Project for South-South and Triangular Cooperation (CADEP), in order to strengthen Indonesia's institutional capacity and human resource capacity for better management of SSC through the implementation of flagship projects. These two projects are designed to develop the capacity of Indonesia for conducting activities under all three pillars.

[38] The three periods of Blue Print: 1) 2010-2014 Strengthening coordination within the improved institutional framework, 2) 2015-2019 taking the role as an emerging partner in innovative South-South development cooperation, and 3) 2020-2025 stronger partnership in SSC (Coordination Team n.d., p. 12).

[39] JICA 2011b, Attachment I, pp. 25-28.

[40] Peraturan Presiden (PERPRES).

[41] Hearing from the JICA Indonesia Office.

Under the second pillar – preparation for the improvement of SSC activities
The formation of the Evaluation Guideline, which started as follow-up activities of an action plan after the JICA training course in Japan, is progressing. For the first follow-up, SEKNEG in cooperation with MOFA held a workshop in 2010 in order to enhance understanding of the evaluation mechanism among stakeholders. In the workshop, InWEnt/GIZ and JICA shared the monitoring and evaluation systems of projects, such as the Programme-integrated Monitoring and Evaluation (PriME) System and Project Cycle Management (PCM) respectively, while implementing agencies also presented their experiences of executing training activities.[42] For the second follow-up in 2011, the GOI developed the first draft of a national evaluation guideline for international training programs, which was further improved through case studies of ex-post evaluation in Vietnam and Fiji and feedback from line ministries and implementing agencies.[43] A completed draft of the evaluation guideline is now in the process of being approved as a formal regulation and is expected to be a national guideline.[44] At the end of 2012, the third follow-up activity will be implemented to introduce the evaluation guideline and its usage and to develop prospective evaluators among line ministries and implementing agencies. These activities are expected to continue in the CADEP.

Under the third pillar – implementation of actual projects
Acquired knowledge and the outcomes derived from activities under the first and second pillars are immediately being utilised in Indonesia's SSC/TrC activities. For instance, the GOI supports Timor-Leste in the road sector; Palestine in the three areas of agriculture, SME development, and health; and Afghanistan in the area of community development. The support takes the forms of international training and the despatch of experts in collaboration with JICA. Additionally, new flagship projects are expected to be formed in accordance with the specific needs of beneficiary countries and the development of Indonesia's capacities for SSC/TrC.

Thus, Indonesia's multidimensional challenges for the implementation of effective SSC/TrC continue under the broad framework of the three pillars.

[42] JICA 2012b, p. 18.
[43] Universitas Indonesia 2011, pp. 1-3.
[44] JICA 2012b, p. 8.

A Good Partnership: Case of Timor-Leste[45]

The road network in Timor-Leste is a major means of connecting the entire country and an essential infrastructure for socio-economic development. This roadway lifeline is heavily damaged by sediment during rainy seasons. This became a heavy burden for Timor-Lester to develop and to maintain their roads. In turn, the road sector was one of the areas in which Indonesia has competitive strengths developed through long financial and technical support from international donors. The road sector was also a high-priority area of JICA's development cooperation for Timor-Leste.

The implementation of triangular cooperation among Timor-Leste, Indonesia, and Japan, formed in a high-level meeting in 2009, was not an easy business for some of the stakeholders due to the sensitive relationships between Indonesia and Timor-Leste, the latter having gained independence from the former in 1999.[46] However, in 2010, a series of meetings among the three countries was held: a SSC meeting on the road sector in Bali, which was attended by road-sector experts from the tree countries, and an annual meeting of the J-SEAM in Manila, during which the focal points of the three countries' SSC/TrC discussed the agenda. The in-depth discussions during the meetings resulted in highlighting the strong needs of Timor-Leste and drew the strong willingness of Indonesia to seek a solution. After a joint fact-finding mission by the GOI and JICA to Timor-Leste, Indonesian experts from the Ministry of Public Works (PU), Indonesia, took the initiative to prepare a project plan to strengthen the technical capacity of the National Directorate of Roads, Bridges and Flood Control, Ministry of Infrastructure of Timor-Leste.

The project was designed with careful concern for regular work schedules of the participants. At the time, twelve Timorese engineers were trained in PU-related institutions in the two fields

[45] JICA 2012b, p. 10.

[46] JICA 2012b, p. 10.


A joint mission to Timor-Leste

related to roads and bridges – 'reconstruction and rehabilitation' and 'construction and maintenance'.[47] Meanwhile, three follow-up missions of Indonesian experts were dispatched to Timor-Leste. In November 2012, a wrap-up seminar was held in Timor-Leste. In March of 2012, JICA had decided to provide a yen loan of 5.3 billion (USD65 million), the first ODA loan, to Timor-Leste for its national road project.[48] The engineers in Timor-Leste have been gaining knowledge shared by the Indonesian partners, which is expected to be actively utilised during implementation of the ODA loan project.

This cooperation has contributed to strengthen the ties between Timorese and Indonesian engineers and to foster trust among them. The GOI is now planning to continue to support Timor-Leste in the road sector (e.g. despatching short-term experts) in response to the latter's request.

Future tasks

Indonesia's efforts have been supported by internal and external factors. Taking advantage of and expanding this momentum is a precondition for its accomplishment. The Coordination Team has to continue encouraging communications among the members and other stakeholders in order to maintain the current harmonisation.

Indonesia will need some time to see actual outcomes from their efforts, since most of the activities have only recently been completed and others are still on-going. For instance, in a seminar of the on-going KM-SSC project, a significant number of participants had difficulty understanding the theoretical concept and methods of knowledge management and the provided materials. In the same vein, it is not an easy task in practice to absorb and apply the necessary knowledge and skills to actually implement SSC/TrC activities.

[47] JICA 2011a, p. 14.

[48] JICA 2012b, p. 10.

3. Significance of the Case
3-1 Turning Points
(1) Strong ownership
Historically, the GOI has a strong ownership for promoting SSC/TrC, which they consolidate under the current national and international circumstances. The GOI have been taking primary initiatives and/or making the decisions in the activities explained above. For instance, BAPPENAS initially requested JICA to support conducting a Policy Study and Basic Study. The GOI established the Coordination Team. Also, it was the GOI's desire to prepare the evaluation guideline. Indonesian experts and staff members of PU actively exchanged views with Timor-Leste partners in the process of preparing a training design.

In the High-Level Meeting in Bali in July 2012, the GOI demonstrated strong leadership organising the event. In the opening remarks, the Indonesian vice president Boediono declared that Indonesia was ready to play the role of a knowledge hub[49] in the areas of 'energy and food security and community-driven disaster mitigation; governance and peace building; and macro-economic management'.[50]

(2) Change drivers
Recent national and international circumstances
For Indonesia, SSC has been a long-running national policy since the Asia-Africa Conference of 1955. There are also other push factors: the steady economic recovery, signing of the Jakarta Commitment, establishment of A4DES, and inclusion of SSC into RPJMN 2010-2014. In addition, the recent international initiatives highlighting SSC as a means of assisting the enhancement of development effectiveness, as well as G20 membership, have been working as a strong pull factor. These national and international trends strongly motivated the GOI to endeavour to become a major player in SSC/TrC.

Involvement of core ministries
The establishment of the Coordination Team is a significant factor in Indonesia's steps towards the promotion of SSC/TrC. The Coordination Team is now functioning, in particular, to coordinate the core

[49] 'A knowledge Hub is an organization or a network, dedicated to share and exchange development experiences and models with partners from other countries' (*Bali Communique* 2012).

[50] *Jakarta Post*, 2012.

institutions, BAPPENAS, MOFA, MOF, and SEKNEG towards smooth, effective implementation of Indonesia's SSC/TrC.

Assets from past cooperation and experiences

Indonesia has competitive strengths in several areas supporting its becoming a pivotal country. These take the form of knowledge and experiences among line ministries, implementing agencies, and NGOs through their SSC/TrC activities over the last few decades. There are several centres of excellence which have been supported by international donors. Some of the centres assisted by JICA, such as the Indonesia University of Education (UOI), the Electronics Engineering Polytechnic Institute of Surabaya (EEPIS-ITS), and NAM-CSSTC, have implemented international training and dispatched experts to other developing countries. These assets within the country, together with its development experiences, position Indonesia to respond to the international trend of highlighting SSC/TrC.

Timely arrangements

At the time when JICA organised the Workshop on South-South Technical Cooperation in 2009, it was extremely important for the GOI to form the policy and restructure mechanism of its SSC. This workshop became support revealing the necessary tasks and directions towards the strategic development of Indonesia's SSC/TrC. Subsequent activities under the three pillars also have been implemented in a timely manner and in response to Indonesia's specific needs.

(3) Learning in the process

A site visit in Brazil

Through activities under the three pillars which cover components extending from upstream (policy) to downstream (actual projects), the learning process among stakeholders as individuals and groups is progressing. In particular, through studies, workshops, and site visits, the core members of the Coordination Team are obtaining first-hand information on the experiences and perspectives of various stakeholders, from implementing agencies to recipient countries. For instance, in the site visits of the Comparative Study supported by JICA, Indonesian participants gained insight into new attempts and challenges in Brazil, the role of the private sector in Japan, and the importance of

national level coordination in Thailand.[51] Through visits to Vietnam and Fiji for the preparation of the evaluation guideline, participants from BAPPENAS, MOFA, and SEKNEG could gain an understanding of the expectations of beneficiary countries and the efficiency of knowledge and skills acquired during training in Indonesia. These have been reflected in the Grand Design, the Blue Print, and the evaluation guideline and will contribute to form future customised SSC/TrC projects for a beneficiary country. Indonesian stakeholders are currently creating knowledge 'through practice',[52] which is developing their capacities as a whole.

3-2 Donor Collaboration for Supporting Indonesia's Challenges

The role of the individual international donor can be considered a catalyst among Indonesian stakeholders and between Indonesia as a pivotal country and beneficiary countries. As an example, JICA's provision of technical and financial support and complementing arrangement were both timely and respectful of the GOI's ownership. Paying attention to and flexibly responding to the GOI's decisions and directions for the development their SSC/TrC, JICA has been supporting for Indonesia's multi-dimensional challenges under the three pillars in a balanced way.

It is notable that international donors have been loosely collaborating, with roles divided intentionally and unintentionally. An example was seen in the process of supporting the formation of the Grand Design and the Blue Print, with JICA assisting the GOI to conduct the Basic Study and prepare the drafts. In coordination with JICA, UNDP Indonesia is expected to support the legitimisation of the drafts of the Grand Design and the Blue Print, since they have hitherto assisted Indonesia's SSC in the area of policy and setting up of institutions, while JICA has focused more on technical assistance for the development of human resources in practice.[53] In contrast, WB Indonesia provided comments on the drafts of the Grand Design and the Blur Print when requested by the GOI.

Collaboration with other international donors also can be observed in the evaluation workshop held in 2010. JICA invited InWEnt as

[51] JICA 2012b, p. 8.

[52] Nonaka et. al. 2008, pp. 13-14.

[53] It was in 2008 when JICA merged with part of the Japan Bank for International Cooperation, who was in charge of loan projects.

a presenter, since, together with UNDP and other donors, they had been lecturers in JICA's training course in Japan. The training course aimed to strengthen the capacity of developing international training, which includes the building of monitoring and evaluation skills. It is a challenging task even for traditional donors, including JICA, to provide such training.[54] Through these activities, JICA and other donors jointly shared their experiences and knowledge, even though some aspects of these might not be fully mature, with participants from prospective pivotal countries. By so doing, they consequently shorten the period needed by Indonesia as an emerging donor to catch up.

4. Implications

This case study provides some implications for future cooperation to support prospective providers of SSC/TrC.

The importance of momentum

In order to support a country's endeavours to becoming a donor, some preconditions seem to be required: specific socio-economic circumstances and sufficient experiences and knowledge in areas that meet the beneficiary countries' needs. The recent socio-economic-political circumstances of Indonesia are reaching a certain maturity for their challenges. Particularly, the adaptation of the Jakarta Commitment, which declared promotion of SSC, was a notable turning point and became a powerful driving force in the development of capacity to implement SSC. These have created the right momentum for international donors to support the GOI. The case of Indonesia suggests the importance of finding the right momentum for providing support.

Sharing a common vision

It is vital to foster and share a common vision. In the case of Indonesia, such a common vision was shared in the process of forming the Grand Design and the Blue Print towards Indonesia's future SSC/TrC at an early stage of the cooperation for Indonesia's challenges. The policy framework provides a basic foundation for Indonesia's SSC/TrC and supports related activities among Indonesian stakeholders and the international community.

[54] As in a final wrap-up session in the 2009 training, a staff member of InWEnt stated that they had just started its monitoring and evaluation and understood that there were various ways (JICA 2010b).

Enhancement of face-to-face dialogues
A series of studies, workshops, and seminars have been providing some space for various stakeholders, including development partners, to discuss common issues officially and unofficially. Participants were often overlapped, which seemingly has supported enhancement of a mutual understanding and the achievement of a sharing of visions for the future directions of Indonesia's SSC/TrC by way of the face-to-face interactions. The enhancement of fact-to-face dialogues makes future collaboration and cooperation smoother.

The creation of the feedback process
Through the actual implementation of projects, stakeholders, particularly policy makers, are able to gain immediate feedback from beneficiary countries. They gain knowledge of the influence and effectiveness of their endeavour through this trial and error, which in turn provides enriched experience for the further improvement of their SSC.

Mutual learning between traditional and emerging donors and between traditional donors
In the process of receiving support from traditional donors, the GOI is gaining insight into the former's advanced know-how and perspectives, such as the importance of considering beneficiary countries' needs and introducing monitoring/evaluation into a project design in the early stage of becoming a donor. In contrast, JICA—and probably other international donors, as well—is learning from Indonesia by way of its different experiences, knowledge, and expertise, which might have better application to beneficiary countries, like the case of Timor-Leste. Indonesia, being familiar with Timor-Leste's circumstances and problems, is becoming a good development partner for JICA, each optimizing and minimising the other's strengths and weakness.

During the course of supporting Indonesia's challenges, traditional donors also had an opportunity to observe the different strengths and know-how of fellow donors in areas such as the preparation of the Grand Design and the Blue Print and the formation of the evaluation workshop.

The importance of close and regular communication
A long and seamless commitment on the part of donors is indispensable for supporting the relatively long process of becoming a donor. JICA has,

for instance, maintained a presence in Indonesia that dates back to the establishment of the Indonesia Office over four decades ago, so the office has a long history of working closely with Indonesian stakeholders. There are also senior staff members who have been closely communicating with stakeholders. This kind of close and regular consultations with stakeholders helps to build trust and make it possible to provide assistance and advice in a timely manner.

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Case 5

The *Taishin* Triangular Initiative in Central America: Co-creating Quake-Resistant Construction Methods for Popular Low-Cost Housing

Shinobu Saito

1. Introduction

The Project *Taishin* (a Japanese word meaning "quake resistant"), or the project for "Enhancement of Technology for the Construction of Popular Earthquake-resistant Housing," aims at alleviating the disaster risk for residents in the popular low-cost housing in El Salvador.

Started in 2003, the project is a collaborative response by Mexico and Japan to help El Salvador to recover and reconstruct the country from the aftermath of two successive tragic earthquakes in 2001, which resulted in the casualties of over 1,000 people with extensive damage on buildings, especially on popular housing of low-income group. El Salvador was fortunate to have a sub-regional center of excellence on disaster prevention, the National Center for Disaster Prevention (CENAPRED) established in 1990 in Mexico with Japanese assistance. Through the triangular partnership, main local counterparts including two universities and a local non-governmental foundation, El Salvador Foundation for Development and Dissemination of Housing (FUNDASAL), have jointly developed and piloted quake-resistant construction methods for popular housing with the compilation of manuals and guidelines. The currently -ongoing phase 2 of the project is working towards the further scaling-up of the tested methods.

In the following Section 1, we first outline the background and the pathways of project development. Section 2 will then examine what factors have contributed to the project's achievement as well as how different actors have contributed to it. Section 3 concludes with some thoughts on the case analysis.

2. Co-creating Quake-resistant Construction Methods: The Project *Taishin*

2-1 El Salvador, Recovering and Rebuilding from the Aftermath of the Earthquake

Diagram 1: Map for the Country in Scope of the Project

Source: Prepared by the author

The Republic of El Salvador in Central America was devastated by two huge successive earthquakes, the first on January 2001 and the second the following month. Their magnitudes measured 7.6 and 6.6 respectively.

The damage was tremendous, especially in the worst-hit provinces in the eastern part of the country. It was estimated that these earthquakes took the lives of more than 1,000 people and inflicted the total damage of 16 billion dollars (that accounts for 12 percent of the GDP of this country)[1]. Approximately 8 percent of the houses in the country were half destroyed or partially destroyed, and approximately 10 percent of these houses were completely destroyed[2]. Public buildings were also affected including half of the hospitals, one third of the schools and even the Office of the President. The aftermath of earthquake revealed the fact that those particularly hit were the poor and the vulnerable group in the country with 60 percent of the half or partially destroyed houses resided

[1] Country Assistance Strategy 2001

[2] Country Assistance Strategy 2001

in by the low income group[3]. The incidents also exposed the insufficient state of social protection accorded to them.

In tackling the tragic disaster, an emergency Consultative Group (CG) meeting was held in March inviting donors including Japan, which resulted in pledges totaling 13 billion dollars of emergency assistance to the country. During the meeting, donors led by IDB announced their priority areas of assistance, which included the provision of temporary housing, special housing subsidy and loan facilities for low-income people.

2-2 Pathways Leading to Project, *Taishin*

(1) Mexico as the emerging sub-regional knowledge source for disaster prevention

One of the hallmarks of this triangular initiative was the proactive engagement of Mexico as the pivotal country. It was largely possible because of the expertise and preparedness which Mexico had already accumulated through its own tragic experience of large earthquake in 1985 which killed about 10,000 people[4]. Another factor was the emergence of Mexico as a newly proactive "emerging" donor at the time.

Following the Mexican earthquake, Mexico decided to establish CENAPRED with the financial and technical assistance (92 experts in total during the period from 1990 to 1994[5]) from the Japanese Government. Since its foundation, CENAPRED has gradually developed its capacity in knowledge and approach in disaster prevention and has particularly built a regional reputation in the scientific assessment technique of seismic capacity of building and houses, which was then started to be called *Taishin*, the Japanese expression for quake resistance.

The growth of CENAPRED as the regional center of excellence in the *Taishin* technique and other disaster prevention technology and approaches also coincided with the gradual emergence of Mexico as an "emerging donor" in the sub-region. At the time of this triangular

[3] Early assessment chart for JICA Project

[4] The Series 3 introducing the project to provide technological cooperation to developing countries in building and housing area - Earthquake disaster prevention project in Mexico, P49

[5] The Series 3 introducing the project to provide technological cooperation to developing countries in building and housing area - Earthquake disaster prevention project in Mexico, P50

initiative, Mexican government had just established Mexican Agency for International Development Corporation (AMEXCID[6]), which was the clear indication of the commitment for extending international cooperation by the Mexican Government. In support of the newly established AMEXCID, the Japanese government dispatched Japanese experts to the organization for its capacity development. Advisers also helped the organization to identify and formulate pilot triangular cooperation initiatives, which had the intention of providing assistance to seven Central American countries including El Salvador.

It was when the preparation of the pilot triangular cooperation was under way that the great earthquake hit El Salvador. In the immediate aftermath of earthquake, the Mexican and Japanese governments quickly dispatched a joint survey mission to El Salvador, and had consultations with the central government in discussing the details of the assistance. As a result of the joint survey, the three parties — Mexico, Japan and El Salvador — identified strong needs in the improvement of earthquake resistance performance (seismic performance) for low-cost state housing as well as self-help housing by low income groups (popular housing). These houses, inhabited by low income groups, were severely destroyed by earthquake.

(2) The formation and implementation of *Taishin* triangular cooperation

Against this backdrop, the three parties agreed on a triangular initiative to develop the capacity of El Salvadorian organizations to effectively undertake the scientific seismic capacity assessment (*Taishin* technique) of popular low-cost housing. The Japanese Government also agreed to provide the necessary facilities and equipment for the *Taishin* experiments. The period of project formulation also coincided with the official visit by then Mexican President Vicente Fox Quesada to Japan in 2003, during which the Japanese and Mexican governments concluded the agreement on the Japan-Mexico Partnership Program (JMPP). This agreement laid the official overall partnership framework between the Japanese and Mexican governments for triangular cooperation. Thus, *Taishin* became one of the earliest triangular cooperation projects undertaken in the framework of the newly launched JMPP.

[6] Then, it was called IMEXCI (Instituto Mexicano de Cooperación Internacional). AMEXCID was newly established in 2011. (http://amexcid.gob.mx/index.php/es/acerca-de-la-amexcid/ique-es-la-amexcid)

Due to the relatively long period taken for formulation and preparation of this triangular initiative, the main activities actually started in late 2003. Nevertheless, its launch was timely as the government introduced the "Safe Country: Plan of Government of El Salvador 2004-2009" (País Seguro: Plan de Gobierno 2004-2009) in the following year, which advocated for the adequate provision of housing with the clear government roles in tackling the challenge such as the formulation of a new housing policy, strengthening of housing standards and regulations, a new loan scheme for informal sector and the land entitlement, especially for the poor. The arrival of the five-year plan document of "Safe Country", which emphasized the housing issues, further enhanced the policy relevance of the *Taishin* initiative.

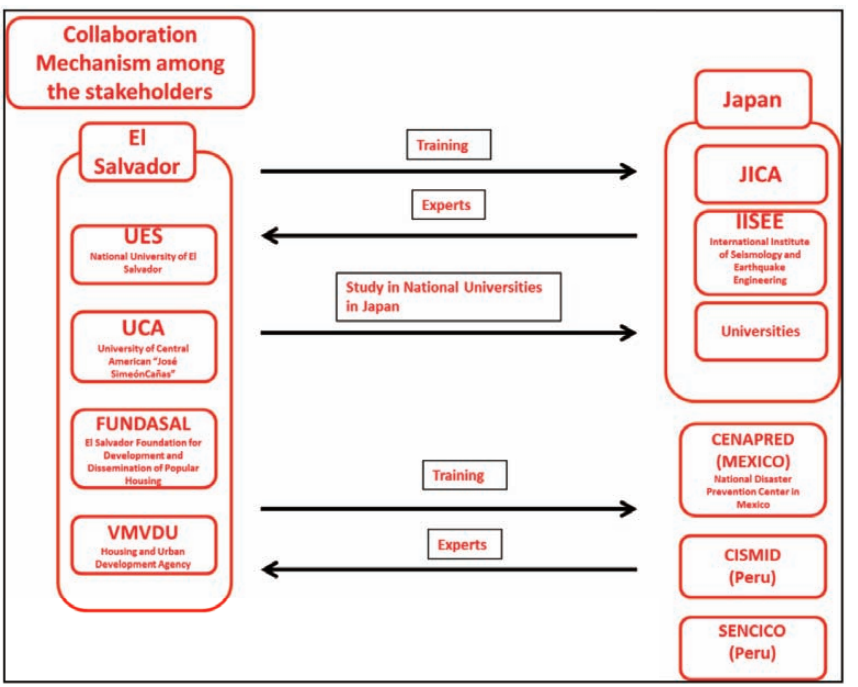
Diagram 2: Photo showing the experimenting on the seismic capacity of a brick

Source: JICA El Salvador Office

In El Salvador, several low-cost housing construction methods were already available on the ground through the work of FUNDASAL, a local foundation working for low-income settlements, an international NGO and other organizations. In spite of the low-cost nature of those methods, which made them accessible to the poor, there was the

important remaining issue that the level of quake-resistance capacity on these methods had not been scientifically tested. The main objective of the triangular initiative was thus to test and refine these low-cost construction methods so as to make them more earthquake-resistant.

Diagram 3: Structure for Project Implementation



Source: Prepared by the author

As shown in the diagram 3 the technical cooperation experts were dispatched from both Mexico and Japan in the program. Additionally, it was decided that some experts that specialized in adobe (sun-dried) brick methods were also sent to El Salvador from a Peruvian organization, which had developed its capacity through bilateral technical cooperation with JICA in the past.

The following are the additional details of the assistance and the role of key actors in this initiative.

(1) El Salvador (The beneficiary country)

- Universities: National University of El Salvador (UES), the premier national comprehensive university and Central American University "José Simeón Cañas" (UCA), the highly-regarded top-ranked private university strong in the engineering field. Both of these universities were to conduct the experiments on the earthquake resistance strength (seismic performance) of the houses which were constructed based on the four construction methods (soil cement, block panel, adobe, and concrete block).
- Local NGO: El Salvador Foundation for Development and Dissemination of Housing (FUNDASAL). FUNDASAL, a local NGO working for low-income settlements, was tasked to build the model housing through which the results of the experiments were further fed back into the project for further actions.
- The Bureau of Housing in the Ministry of Housing and Urban Development (Vice Ministerio de Vivienda y Desarrollo Urbano/ VMVDU): The ministry bureau in charge of housing policy was given the supervisory and advisory role in the project. It also took responsibility for the policy actions such as the formulation of the pilot project.
- The joint dissemination task team: The task team, consisted of the representatives from all the counterpart organizations, was established as the institutional mechanism for nationally disseminating and sharing the knowledge related to the construction methods for earthquake resistant houses.

(2) Mexico as the main pivotal country with Peru as the second pivotal nation

- CENAPRED (National Center for Disaster Prevention): CENAPRED, as the regional center of excellence in disaster prevention techniques, provides capacity development assistance to El Salvadorian counterpart organizations in the *Taishin* technique, the pilot model housing project and the advisory service for the institutional mechanism for disseminating *Taishin* methods.
- AMEXCID (Mexican Agency for International Development Corporation): AMEXCID oversees the support from Mexico to El Salvador at a policy level.
- Japan-Peru Earthquake Disaster Prevention Center (Centro Peruano-Japonés de Investigaciones Sísmicas y Mitigación de Desastres): CISMID of Peru is noted for its expertise in quake-resistant adobe

house construction techniques. As many Peruvians still reside in adobe houses unlike Mexico, Peru with its CISMID is better positioned for sharing knowledge on the improved technique for adobe houses. It was also opportune to engage CISMID as there was an ongoing JICA technical cooperation project in the Peruvian organization at the time, which also aims to disseminate the appropriate construction methods for quake resistant houses[7].

(3) Japan as the facilitating donor country

- Japanese Government through JICA, the executing organ: The Japanese government through JICA has facilitated the triangular initiative through the process of formulation, execution and progress monitoring. It assisted partners in both managerial and financial aspects of the initiative including the provision of necessary equipment and facilities for *Taishin* experiments, the dispatch of experts from Mexico, Peru and Japan and the acceptance of El Salvadorians for short-term training as well as long-term fellowships.
- Partner institutions in Japan: A number of Japanese institutions including the Building Research Institute, the International Institute of Seismology and the Earthquake Engineering (IISEE) and some National Universities have been engaged in the program with the provision of training opportunities in Japan as well as the fellowship opportunities in partnership with JICA.

2-3 The Progress, Achievements and Challenges

Progress

All the project activities for the first phase of this initiative have been completed as planned. As a triangular cooperation, it is particularly noteworthy that Mexican experts have played a central and effective role in the planning and execution of this program from the onset in close collaboration with El Salvadorian a resident coordinator and Japanese experts.

Nonetheless, this initiative has not been without challenges in its implementation process. For instance, the initial consensus on the project building design such as coordination mechanisms and the procedural details among stakeholders took a quite long time due to the different policies and institutional settings of the three countries.

[7] The project for technical training and disseminating low cost earthquake resistant housing (2005~2007)

However, such initial lengthy dialogues among partner countries eventually turned out to be positive for the subsequent smooth execution of the project.

There were also certain difficulties in information sharing and the team building among organizations within El Salvador due partly to the competition among universities. However, such initial challenges were gradually overcome through their collaborative work through the initiative as well as the frequent dialogues at the monthly "technical committee" meetings in which representatives from all the counterpart organizations participated. In the committee, the participants shared the information and had intense discussions regarding the progress of actions set for each member. In this regard, the committee effectively provided a space and opportunity, or "Ba" for mutual learning and actions among members[8].

Major accomplishments

Although the triangular collaboration towards the further national scale-up of *Taishin* housing is continuing, the initiative has already recorded several notable accomplishments.

First of all, the initiative has undertaken all the planned activities for the transfer and adaption of *Taishin* assessment techniques to two major national institutions including the National University of El Salvador and the UCA. Now, these two universities are capable of undertaking the scientific seismic capacity assessments using the equipment and facilities provided by Japan. Through the *Taishin* experiment, the laboratory of two universities in collaboration with FUNDASAL has already finished testing four low-cost housing construction methods. It is also noteworthy that in 2012, both of these universities newly established a Master's Program for Earthquake Engineering, which takes advantage of the capacity and expertise the universities have built up through this *Taishin* initiative. Though the start of these programs are not solely explained by the *Taishin*, it, nevertheless, indicates that two universities are now in a position of offering such postgraduate programs in the closely related field to which *Taishin* has made contributions.

Secondly and closely related to the first achievement, the project

[8] SECI, Ba and Leadership: a Unified Model of Dynamic Knowledge Creation P15

succeeded in refining four low-cost housing construction techniques to make them more earthquake resistant. In collaboration with FUNDASAL, the project undertook the experimental housing construction pilot, based on the refined quake-resistance methods. With regard to the soil cement method, one of the four appropriate technologies for low-cost housing, the project improved the soil cement by adding the locally available volcanic ash to soils. Furthermore, in collaboration with El Salvador's "Chagas' disease[9] project" with JICA assistance, the *Taishin* project also introduced cement plaster for adobes, which is effective in preventing the vector insect of Chagas' disease (kissing bugs) from encroaching into the walls and floors of the adobe houses. The introduction of such improved technique of low-cost adobe methods, which is more quake-resistant and repellent to insects, would be particularly beneficial for low-income groups. Following the satisfactory results of the pilots, manuals and training materials on the quake-resistant construction methods were developed and distributed widely. Several training events for its dissemination have also been organized.

Thirdly, thanks to the successes in the capacity development of partner institutions, El Salvador has now started to play the role of a sub-regional pivotal country in the field of the *Taishin* technique through this triangular initiative. The following are some examples.

- Assistance to Nicaragua: From 2010, the UCA and other El Salvadorian counterpart organizations started to jointly host specialist training programs for the Nicaraguan counterparts on the *Taishin* technique as part of the ongoing project in Nicaragua for the improvement of the earthquake-resistant housing construction technologies.
- Assistant to the Dominican Republic and Haiti: A special seminar was organized in the Dominican Republic in March 2011 with the aim of disseminating the El Salvadorian experience to counterparts of the Dominican Republic as well as Haiti, which were affected by earthquake in January 2010. The staff from two universities in El Salvador and those from the El Salvador Building Association

[9] It is the tropical disease the second serious disease after malaria. In Republic of El Salvador, it is considered that approximately 32,000 people that represent about 4.3% of the population have been infected with Chagas disease. The assassin bug transmitting Chagas disease resides in the walls and floors of adobe houses (http://knowledge.jica.go.jp/km/ProjectView.nsf/SearchResultView/9552C05F6418FF90492575D100359127?OpenDocument")

participated in this seminar as instructors. El Salvadorian experts also organized a training program in El Salvador for the officials of the Haitian Public Works, Transport and Communication Ministry in response to the official request from the Haitian government.

Other notable actions

In addition to the above, there were other notable achievements, which were not fully envisaged at the beginning of the project. One such achievement is the organizational change in the management of the housing sector. Partly inspired by this triangular program, the Bureau of Housing in the Ministry of Housing and Urban Development (VMVDU), the national policy maker in the housing area, voluntarily took the initiative in establishing the Department of Standard Formulation and Investigation (UNICONS) in itself and created the El Salvador Construction Institute (ISC) to modernize the construction industry in El Salvador. As part of the currently ongoing phase two of this project, the UNICONS are revising relevant regulations and drafting out technical standards pertaining to four construction methods.

Another notable self-help action by El Salvador, inspired by this initiative, was the closer academic exchanges between the two universities. Before this project started, the collaboration between two universities had been very limited partly due to the competition between the two institutions. Through the joint activities of this initiative, they have been able to build mutual trust and a closer partnership. They are now undertaking various joint activities in the field of quake resistant construction engineering to support other Central American countries without much external intervention.

Ongoing project for further national dissemination

The follow-up phase of this triangular initiative is currently underway. The ongoing project is currently making an effort to mainstream the proven quake-resistant low-cost housing methods into national technical standards for further scaling-up. Considering the fact that the country had not even had a national official standard for housing construction, the ongoing project is now playing a critical role in the preparation of policy and standards for safe and quake-resistant popular low-cost housing, building on the refined technology and methods developed during the first phase, which this case study has illustrated.

3. Case Analysis

3-1 Key Factors of Achievement

The key factors of notable achievements so far in this *Taishin* initiative include the following;

- ✓ Strong knowledge demand matched by the provision of appropriate knowledge by the pivotal country
- ✓ Engagement of major key stakeholders committed to the cause
- ✓ Institutional innovations for effective knowledge transfer and mutual learning

The knowledge demand matched by the timely and adequate opportunity provisions for knowledge exchange

This is a triangular knowledge exchange triggered by two tragic large earthquakes in El Salvador. The desire to acquire "knowledge" for safe quake-resistant housing in the post-earthquake period in the country was matched by the supply of *Taishin* methods by Mexico. Prior to the El Salvadorian earthquakes, Mexico had acquired and localized the knowledge from Japan over the years following their tragic experiences of huge earthquakes in the mid-1980s. In other words, the fact that all the three countries in this initiative share recent tragic experiences of large earthquakes became an underlying driving force to connect three countries towards this triangular program.

In El Salvador, the devastation after the earthquakes provided a basic country context for increasing recognition on the need for the "knowledge" of earthquake resistant housing construction standards and methods, virtually non-existent in the country prior to the disaster. The aftermath of earthquakes also brought to light the national reality that low-income groups residing in popular and self-constructed housing were the most affected due to the inadequate construction methods used.

Such potential ground for demand on the *Taishin* knowledge was then underpinned by the high level emergency Consultative Group meeting for reconstruction as well as by the formulation and launch of a national development plan after the meeting. At the CG meeting, donors including the IDB made commitments for support, which included policy actions on housing issues with the provision of temporary housing and other related schemes such as special housing loans. This CG meeting effectively provided the initial impetus for policy actions on

housing including *Taishin*. The policy environment surrounding this initiative was further consolidated by the formulation and launch of a coherent national development plan entitled "Safe Country (2004-2009) Plan of Government of El Salvador 2004-2009" (País Seguro: Plan de Gobierno)" in 2004, soon after the start of *Taishin*. The plan clearly stated the importance of the role of the state in ensuring adequate access to houses by the people in low income brackets. The demand and the commitment for the acquisition of *Taishin* knowledge were also evident among implementing organizations. One such indication was the construction of a building by the UCA, which could accommodate the facilities for the experiments under their own financing.

In this case, Mexico with its national disaster prevention center, the CENAPRED played the role of supplying knowledge to El Salvador.
Mexico has accumulated knowledge for disaster prevention, having experienced a large earthquake. As stated in the preceding sections, the establishment of CENAPRED was one of these initiatives with the help of the Japanese Government and JICA. Over the years, Mexico has absorbed and adapted the Japanese disaster prevention technology of *Taishin* into the context of Mexico as well as the Central America sub-region. Through the process, CENAPRED has emerged as the regional center of excellence. It was therefore fortunate for El Salvador to have Mexico as a reliable sub-regional partner, capable of providing localized *Taishin* methods suited to the Central American context. The Japanese Government through JICA, its ODA implementation arm, has helped facilitate both countries to link up for knowledge exchange such as through the dispatch of joint fact finding and dialogue missions by Mexico and Japan to El Salvador to explore the potential area for collaboration.

Against these backdrops, El Salvador thus requested Mexico, the pivotal country, and Japan, to provide the country with the opportunity for learning the *Taishin* technique.

Engagement of major key stakeholders committed to the cause
The initiative strategically engaged a broad range of El Salvadorian stakeholders on housing issues in the country, from policy to research and dissemination. As mentioned in the previous section, the key actors involved include VMVDU, two universities; the National University of El Salvador (UES) and Central American University "José Simeón

Cañas" (UCA), and FUNDASAL, a non-government foundation working for popular housing.

As envisaged, their engagement in the initiative became an asset for the progress of the initiative. VMVDU, mandated for national planning and implementation of urban development[10] and housing issues, has demonstrated its leadership and commitment throughout the initiative including the proactive contribution to the formulation process of this project. Two universities of UES and UCA, the main executing organization of the project, have played the central role in the initiative. During the initiative, they made an effort to build their staff capacity to be able to undertake the experiment with support from Mexico and Japan. Last, but not the least, the country was also fortunate to have the well-known non-governmental agency, FUNDASAL, actively working in the very area of popular housing. The engagement of the foundation, equipped with rich practical experience in the field, has certainly helped the initiative in the pilot construction project as well as its dissemination process in the country, which is still ongoing. Active engagement of counterpart organizations in El Salvador equipped with the basic capacity to plan and execute the activities has been one of the key factors for the good progress in knowledge exchange.

Institutional innovations for effective knowledge transfer and mutual learning

In addition to further development of capacities for the execution and scaling-up of quake-resistant housing policy and practice, another challenge for the initiative was how to ensure the closer collaboration, continuous exchange and mutual learning among diverse actors for the adaptation, institutionalization and operational scaling-up of *Taishin*. In spite of the relatively sound capacity of the counterpart organizations involved, one of the bottlenecks was the insufficient collaboration among these organizations. Therefore, as an integral part of the program, the *Taishin* initiative consciously designed "Ba" and institutional mechanism so as to ensure the closer partnership and continuous mutual learning among them. One such institutional set-up was the monthly Technical Committee.

Besides the routine meeting agenda such as the monitoring of progress and performance, the interactions at the meeting helped facilitate the

[10] VMVDU website http://www.vivienda.gob.sv/

members to know each other well and resulted in the stronger mutual trust within the group. The start of closer academic exchanges by the two universities in earthquake engineering, for example, is a clear indication of the enhanced partnership that has grown out of the *Taishin* initiative. The Committee has thus provided precious opportunities and spaces among the stakeholders for information exchange, trust building and mutual learning with the common vision and objective of localizing and scaling-up *Taishin* methods.

It is also worth noting that an El Salvadorian coordinator assigned to the project played a key role in consolidating and coordinating stakeholders of this project. In the case of triangular cooperation in which large numbers of diverse stakeholders are involved, the presence of capable coordinator is often indispensable to smooth the process of trust building and mutual learning among the stakeholders.

3-2 Roles and Effective Assistance Approaches by Pivotal Country and the Donors

In this initiative, external actors have played an effective role not only as the knowledge source but also as facilitator of knowledge acquisition by El Salvador counterparts.

The roles of the pivotal country

Mexico, the main pivotal country of this case, played the critical role in sharing their localized *Taishin* knowledge and advising and helping to facilitate the management of the knowledge process.

As stated, Mexico has learned the technology and approaches on earthquake disaster prevention with Japanese assistance ever since the major earthquake in 1985. Building on what the country has learned from Japan, she has even undertaken a training program on *Taishin* for the counterparts from Central America and the Caribbean countries with complementary JICA support between 1997 and 2001. Through these prior efforts, CENAPRED of Mexico, the main actor of the pivotal country, has already nurtured its capacity as the regional knowledge base on *Taishin*. The movement in Mexico towards more structured and systematic assistance to neighboring countries with the establishment of AMEXCID was timely for Mexico to start activities as the pivotal nation.

More specifically, Mexican expert teams mostly from CENAPRED, particularly its committed team leader, played the critical role for the progress of the *Taishin* initiative so far. It was the team leader, who played the central role with the technical advice from Japanese experts during the formulation process of the detailed plan of this project. Following the launch of this project, the team leader coordinated the dispatch of other Mexican specialists in response to the request from El Salvador. Mexican expert teams also advised the initiative on the mobilization of Peruvian experts, who are better positioned on the specific knowledge of adobe houses than Mexican specialists. Gathering from those involved in the initiative, the contribution of Mexican experts to this initiative was not limited to the transfer of technical and management skills but the spirit to catch up. The Mexican experts, who had gone through the similar process of learning the *Taishin* approach from Japanese experts, recognized what sort of capacity challenges their El Salvadorian counterparts would have to face and thus were well-positioned to provide necessary encouragement for their counterparts to further progress. All in all, the committed experts with the presence of an effective leader, who all had the direct experience of absorbing the knowledge from Japan, and are conversant with the sub-regional context were instrumental for the success of the initiative.

Japanese Government and JICA as the knowledge catalyst

As has been seen above, Mexico and Peru played the proactive role in this knowledge exchange with El Salvador. What then was the role of Japan and JICA in this endeavor?

First of all, Japan played the role of nurturing the knowledge base on *Taishin* in the sub-region, where countries frequently experience serious earthquakes. JICA helped the Mexican government with the establishment and capacity development of CENAPRED, which then extended assistance to El Salvador. Also, the Japanese government through JICA simultaneously supported the AMEXCID, newly established at the time, through Japanese advisers dispatched to the organization for its capacity development. Those advisers helped to identify and formulate the pilot triangular cooperation initiatives, through which Mexico had the intention of providing assistance to seven Central American countries including El Salvador.

JICA dispatched several Japanese experts to El Salvador to provide

complementary technical and specialist advice to the counterparts in the country. This helped ensure that the El Salvadorians would practice the newly acquired knowledge on their own with periodic external advice for further actions.

The El Salvadorian counterparts of the project consolidated their knowledge through these training. Several of them went on the overseas training or fellowship program provided by the International Institute of Seismology and Earthquake Engineering (IISEE) in Japan and some National Universities. Out of the eight people, three persons obtained doctor's degree or master's degree. This overseas education stimulated the counterparts to be engaged in the activities of the project more energetically.

4. Conclusion

As we have seen, the project has been successful in producing a new body of knowledge by combining knowledge coming from El Salvador, Mexico, Japan, and in part from Peru. And similar processes of knowledge creation and exchange are still continuing and expanding.

There are a number of factors that have helped the development of the project, but three of these may have been the most critical: First, the beneficiary country had a strong need for the body of knowledge; indeed there was a desperate need for and commitment to obtain applicable knowledge on earthquake-resistant housing in El Salvador. Second, there was a base knowledge on which new local knowledge could be developed. Third, those who extended cooperation, both Mexican and Japanese, had been struggling with the same challenge of disaster prevention, and that shared experience among the professionals who gathered in the project, together with the interactive process of the project, might have facilitated the joint knowledge creation.

As emphasized in Chapter 2 of this volume, disaster prevention is becoming a global challenge, requiring the concerted efforts of the entire international community. The importance of knowledge creation leading to affordable disaster prevention like the ones realized in this project cannot be overemphasized; similar efforts to that end are called for.

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Case 6

Sharing Sustainable Agricultural Methods between "the Sister Countries of Española Island" in the Caribbean

Shinobu Saito

1. Introduction

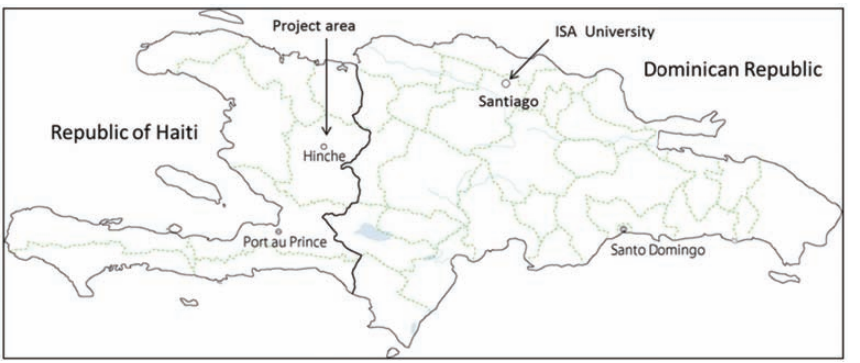
The project of Technical Training to technicians in the Agricultural Production System in the mountainous areas of the Republic of Haiti aims to contribute to an increase in the production of food crops by farmers in the Central Province of Haiti by way of advancing the technical farm skills of agricultural extension officers. The project, started in October 2010, runs until October of 2013.

Serving as a pivotal country, the Dominican Republic, through the Ministry of Agriculture and ISA University, are extending support to Haiti to improve the farming skills of Haiti. The main Haitian participants are the Ministry of Agriculture, Natural Resources and Rural Development of Republic of Haiti (MARNDR). NGOs working in Haiti are also benefitting from the project. JICA plays the role of catalyst in the project activities.

Given the absorptive capacity of Haiti, the project is being implemented on a modest scale, comprising training programs in the Dominican Republic, followed by field visits to Haiti by the Dominican Republic's and Japanese counterparts after the participants return home. So far, results are encouraging: though output is rather limited, the project has made available such agricultural techniques as homemade composts and fertilizers, drip irrigation systems using readily available materials such as plastic bottles, and rafting techniques using coating materials easily available to Haitian agricultural workers. The enthusiasm of Haitian members is high, and they are starting to work proactively.
The next section contains an overview of the countries involved, project background information and mentions of achievements. Section 2 attempts to analyze the case from the perspective of capacity development, or scaling up. And the final section provides conclusions.

2. Case Overview
2-1 Development Challenges confronting the Beneficiary Country and the Context

Figure 1. Location of Project Area



Source: Prepared by the author

(1) Republic of Haiti

Haiti is an island nation located in the Caribbean Sea. After Columbus came to the island in 1492 and claimed it for the Spanish crown, in subsequent years France and Spain fought for supremacy over the island that the Spanish named *La isla La Española* (Española Island). In 1697, a third of the west side of the island became French territory (now Haiti); and the east side, Spanish territory (now the Dominican Republic). With the revolt by the African slaves in 1804, Haiti became independent from France. This independence was the first of its kind in Latin America, the second in the Americas, and it created the world's first black republic nation. Since independence, however, the country's domestic political turmoil has continued to this day and the economy has persistently been in a stagnant state. Major developed countries had not provided much in the way of direct support; most support for Haiti is from domestic and foreign NGOs.[1] However, in 2006, the coming into power of the Alexis Administration brought about a policy shift in the international community leading to their support in the development of Haiti. Finally, the situation in Haiti began to stabilize.

Haiti created and submitted the Growth and Poverty Reduction Strategy Paper (GPRSP) in 2007, and the International Conference toward a New Future in Haiti was held in 2009. The Japanese Government

[1] Hearing from the (then) Deputy Director of the JICA Dominican Republic Office

expressed support in their seat (from 2009 to 2011 providing $50 million USD out of the $324 million USD total pledges).

Food and agriculture were raised as the two key areas of the GPRSP, while expansion of agricultural production, the promotion of sustainable agriculture, and the development of market infrastructure have been serious challenges. In January 2010, as the country worked on reconstruction based on the GPRSP, a major earthquake (magnitude 7.0) struck claiming the lives of over 310,000 people.[2] Immediately afterward, the government launched the Action Plan for National Recovery and Development of Haiti (HAC) with the support of donor countries, following the GPRSP and choosing agriculture as one of the four major priority industries. The main donors in the agricultural sector are Inter-American Development Bank (IDB), the United States of America, Canada, and the World Bank.

(2) Dominican Republic

The Dominican Republic occupies the eastern half of Española Island. Although they were independent from France as a part of Haiti in 1804, they resented being under Haitian rule, and won independence from Haiti in 1845. Thereafter, both Haiti and the Dominican Republic followed a similar historical transition to civilian rule[3]: military occupation by the United States followed by a dictatorship. However, the Dominican Republic achieved phenomenal economic development in contrast to its neighbor. The Gross National Income (GNI) of the two countries was almost the same in1960, but the Dominican Republic's rate of economic growth from 1960-2010 averaged 5% and the country rose in rank to first place[4] in the Latin American region, with a GNI per capita of $5,240 USD in 2011[5]. In contrast, the 1% average economic growth rate in Haiti was the lowest[6] in Latin America, with a GNI per capita of $700 USD in 2011[7]. The Dominican Republic implemented organizational reform and decided to develop a long-term national development

[2] Action Plan for National Recovery and Development of Haiti

[3] Haití, Republica Dominicana: Más que la suma de las partes Un Estudio Sobre las Relaciones Económicas Bilaterales, P3

[4] Haití, Republica Dominicana: Más que la suma de las partes Un Estudio Sobre las Relaciones Económicas Bilaterales, P3

[5] World Development Indicator

[6] Haití, Republica Dominicana: Más que la suma de las partes Un Estudio Sobre las Relaciones Económicas Bilaterales, P3

[7] World Development Indicator

strategy (Estrategía Nacional de Desarrollo 2010-2030 un Viaje de Transformación hacia un País Mejor), which aims to modernize the nation for the first time. As one example, the Ministry of Economy Planning and Development (Ministerio de Economía, Planificación y Desarrollo : MEPyD) was established (2006) to serve as an organization for establishing and implementing economic policy and coordinating international cooperation. JICA dispatched an expert to help build the capacity of the MEPyD for the Dominican Republic to be an effective pivotal country.

(3) Sister countries in a state of mutual distrust

Historically, despite some of the long-standing problems and delicate mutual public sentiments between them,[8] the Dominican Republic and Haiti have been mutually dependent, one extending a helping hand to the other from time to time, with the Dominican Republic working more actively to support Haiti. In 2004, when Haitian President Aristide was exiled, the United Nations Stabilization Mission in Haiti (MINUSTAH) moved in as a peacekeeping force. Since then, the Dominican Republic has positively supported the stabilization of Haiti. Following the 2010 earthquake in Haiti, an emergency donor meeting was held in the neighboring Dominican Republic, and since then, the Republic has hosted a base for the transport of emergency relief supplies to Haiti.

2-2 Background of the Project and Project Details

(1) Background of triangular cooperation

Responding to a request by the Japanese government, JICA dispatched a preliminary mission to the Dominican Republic and Haiti in 2009. As a result of the dialogs, JICA implemented what it terms "triangular training," ("third-country training") in the area of agriculture. It was decided that the Dominican Republic will be the pivotal-country offering the training. GPRSP and HAC pointed out that, as the agricultural sector of Haiti required funds, human resources, technology and infrastructure, a comprehensive package of countermeasures was needed. JICA had a long history of implementing support in the area of agriculture in the Dominican Republic and the Dominican Republic was familiar with JICA's modes of operation and with Japan's agricultural technologies.

[8] They include, for example, illegal logging along the border and illegal immigration from Haiti to the Dominican Republic

The Dominican Republic designated ISA University as the institution responsible for the cooperation.

Prior to this, some joint preparations for the support of Haiti were made by the Dominican Republic and Japan (JICA), which helped the actual project formulation process. In the early 2000s, when Haiti's political situation was unstable, the JICA Dominican Republic Office conducted a survey in Haiti that revealed the country's formidable needs.[9] Assuming the Dominican Republic's potential as a future partner in supporting Haiti, the JICA office proposed a joint third-country training[10] as a trial, which was subsequently completed.

The Dominican Republic has also received a number of benefits by taking part in aid for Haiti; it was believed that the aid would help the two sister countries alleviate thorny problems between them, such as illegal immigration from Haiti, illegal logging along the border, and poverty along the border, among others. Illegal logging had a negative impact for both countries for which tourism is important. Border regions in the Dominican Republic are poverty stricken areas where numerous Haitians have settled, and with dysfunctional government control, public disorder was rampant.[11] For the Dominican Republic government, Haiti is the only neighboring country that bisects the island. With the geographical proximity and the close tie between the two countries,[12] the Republic has been proactively engaged in the formulation process of this triangular cooperation program.

(2) Triangular cooperation initiatives

The triangular cooperation comprised training programs for agricultural extension officers and NGO field workers. The trainees were then

[9] Hearing from the (then) Deputy Director of the JICA Dominican Republic Office

[10] "Improved diagnostic imaging technology training in Central America and the Caribbean region" 2005-2010

[11] According to the Constitution of the Dominican Republic (2010), the condition to acquire nationality was changed from birthright (jus soli) to lineage (jus sanguinis). Thus, the children of illegal Haitian immigrants now can acquire neither Haiti nor Dominican Republic nationality. This has developed into an international human rights issue. Both countries have problems that they need to tackle together. Illegal immigrants are currently estimated between 900,000 to 1.5 million people, which are putting pressure on the population of the Dominican Republic (9.93 million people, 2010). Most workers on sugarcane plantations and construction sites and in paddy fields are Haitian, which shows how dependent the Dominican Republic is on these workers.

[12] Feedback from the (then) Deputy Director of the JICA Dominican Republic Office

expected to transfer the technology to farmers. Some 15 participants were invited to the University of Agriculture in the Dominican Republic to attend a one-month training program whose focus was advanced agricultural technology (soil conservation, irrigation, and cultivation techniques for vegetables, among others).[13] The training institution was part of ISA University, which had accepted many Haitian students in the past. The professors in ISA University were training-program lecturers. As resources for the training program, organizations who had worked with JICA in the past also participated, such as the Secretary of Agriculture (SEA) and the Dominican Institute of Investigations of Agriculture, Livestock and Forest (IDIAF). An expert was dispatched from JICA. The textbook was prepared in the French-based Creole language spoken by Haitians for the convenience of the participants.[14] The training program consisted of lectures and practical training in the field. The program contents included Española Island's hydrology, soil conservation in the mountain slope, irrigation, vegetable cultivation, use of organic fertilizer, and producing composts. Upon completion of training, participants are expected to carry out an action plan in their working field. The training will be held four times during the period of 2010 to 2013.

As a follow up to the training, lecturers and the JICA expert made field visits to Haiti to support the trained participants.

On-site advisory support in Haiti by the professionals in the PROAMOH project

The project demonstrated that off-the-job training, if accompanied by the appropriate follow-up, leads to positive results. For example, how to improve the quality of soil to increase the production of agricultural crops was one of the training subjects. Having learned this skill, some of former trainees, after returning home, started to manufacture compost fertilizers. One former trainee wrongly used low-grade soil containing sand not suited to composting. Seeing the fruitless effort, the ISA University lecturer and the expert on the field visit suggested using leaf mold instead, because leaf mold promotes the fermentation of the compost, which yields a better result.

[13] "Cholera Prevention" was added later.

[14] The native language of Haiti is Haiti creole, a combination of French and the languages of West Africa spoken by the slaves brought to Haiti.

Figure 2. Practice of Production of Compost in the Dominican Republic

Source: Go Kimura

2-3 Achievements through Efforts and Challenges

Though the program is still ongoing, several encouraging achievements have been reported. For instance, the former trainees started to experimentally introduce some of the techniques they learned upon returning home. Another positive sign is the gradual self-help scale-up process after the program. Having developed a strong sense of unity among themselves during the training, the ex-participants, as a team, voluntarily organized a workshop a few months after the training, for the benefit of extension officers and those workers who did not have a chance to participate in the training in the Dominican Republic, with the financial support of the Haitian Ministry of Agriculture as well as the JICA Haiti Field Office. These self-help initiatives have been enhanced by the informal network and the rapport created among participants during the training.

The possibility of further positive results is also likely. Trained officers and workers asked JICA to provide additional training at the advanced level, which was not covered in the original plan, and JICA accepted

their request. The advanced training was completed in November of 2012. Farmers are adopting the technology passed on by the extension officers and the use of contour cultivation[15] and the production of compost are already spreading.

The remaining challenge is the further strengthening and refining of the efforts to facilitate the building of a network among the training participants by which they liaise with other existing networks.

3. Case Analysis

3-1 Success Factors

Factors supporting these developments, as described above, are stakeholder's ownership and various drivers of change.

(1) Stakeholder ownership

Training participants from Haiti demonstrated a strong motivation to learn from the training because they knew that the knowledge they acquired would be directly linked to their success on the job. During the program, they tackled the tasks required of them with great enthusiasm, and successfully completed challenging assignments. The Dominican Republic's professors also developed a deep commitment to the project in ensuring the quality of the program. It has been reported that the Japanese expert had to lead the process of formulation and execution at certain times in the initial stages of the project. As the project progressed, however, the Dominican Republic's counterparts started to increasingly play the lead role in the program. For instance, a Dominican Republic instructor took the initiative to add the subject of cholera prevention[16] to the training curriculum, which was highly relevant to the health of the rural population in Haiti.

(2) Change drivers

Several drivers facilitated the progress of the project.

✓ **Policy environment:** The general policy guideline provided by GPRSP and HAC, clearly stating that agriculture should be revived

[15] The farming method which recommends creation of a furrow along the contour of the slope to prevent the deletion of the topsoil by rainwater.

[16] After the earthquake, in October 2010, cholera broke out. In Haiti, cholera had not occurred for over 100 years. After the earthquake, health conditions deteriorated to the point where believed that they caused cholera outbreak. Another belief is that the peacekeeping force brought the bacteria to Haiti. According to the Haitian Ministry of Health approximately 580,000 people were affected and approximately 7,500 died (as of July 22, 2012).

as one of the most important industries, has ensured the policy relevance of this triangular program.

- ✓ **The role of JICA Expert:** The expert made a conscious effort to build an equal partnership with the Dominican lecturers with mutual learning. In addition, the expert strategically identified key persons at ISA University who could help improve the training contents and cope with the various operational problems. To make sure all participants felt at home in class, the expert helped create an atmosphere in which all the counterparts could closely work on the preparation and execution of the program as a team. The expert also ensured the provision of complementary and supportive advice on the activities of the participants.
- ✓ **The engagement of key persons at the host organization, the ISA University:** The expert strategically engages key persons of the ISA University including the former Vice-Chancellor Ing. Cesar E. Cruz, and Dean Dr. Rafael Amable Vásquez. The commitment by these key persons promoted the project's visibility and presence on campus.
- ✓ **The presence of highly motivated instructors (ISA University and other organizations):** Working closely with the JICA expert, lecturers have also developed a sense of ownership and started to eagerly contribute to the training programs. Among the lecturers from outside the university, some had participated in JICA training in Japan, which added to their sense of belongingness to the project. They worked as equal partners with the JICA expert. It is noteworthy that those who visited Haiti started to have a strong motivation, witnessing the country's situation on the ground and listening to the voices of local Haitians.
- ✓ **Network:** The training participants who returned to Haiti continued to exchange information among them. It was there that they hit upon the idea of holding additional seminars. Many of the trained officers and workers share workplaces in Haiti and, hence, have many opportunities to meet to maintain their network. At these seminars, new information is shared and new ideas are born. When the trained officers and workers resume working back home, they usually do not have someone to consult, this gap was filled partly by fellow trainees.
- ✓ **Strategic selection of trainees:** One of the key factors of a successful training program is that it strategically recruits the right kind of participants. To this end, pre-training seminars were

organized in Haiti by the Haitian Ministry of Agriculture, Dominican Republic officials (Ministry of Agriculture and ISA University) with the attendance of the JICA expert. Also invited to these seminars were Haitian professionals who had attended earlier training programs and who could adequately advise prospective seminar participants. This pre-training process engaging ex-trainees helped facilitate the smooth induction of trainees into the program.

✓ **Follow Up:** This program organized in the Dominican Republic has been followed up by an advisory and support mission to the field of ex-trainees in Haiti. The advisory team consisted of the Dominican Republic's Ministry of Agriculture and ISA University, the Haitian Ministry of Agriculture, and the JICA expert. This follow up is a great opportunity for ex-trainees to seek advice, gather together, and get feedback on their activities. They can share experiences, challenges and successes and further discuss and reflect on the pertinent issues that need special attention. This practice helps generate new ideas.

(3) Mechanisms for continuous mutual learning and joint solution discovery

Many efforts are made to ensure that the process of mutual and continuous learning takes place. They included:

✓ **Small meeting opportunities:** The lecturers and the JICA expert have small meetings periodically between individual training sessions (classes) to determine what to add to or change in the training contents, or how to improve the implementation system as a whole. They are well-aware that such timely adjustment even during the course will improve the effectiveness of the program.

✓ **Feedback mechanism for continuous program improvement:** At the end of the training, a carefully prepared questionnaire is passed out to trainees asking them to evaluate the quality of contents and the organization of the training. They also hold a dedicated participatory workshop at the end to directly hear the assessment of the program quality by participants. The information collected at the workshops is sent to the appropriate organizations and the project organizers for subsequent action (such as a change of lecturers, or an addition to courses).

✓ **Adequate follow-up strategy:** The practice of follow up mentioned above was not only beneficial to former participants but also to the program organizers. The visits enabled the program organizers to

grasp the latest conditions of the local area in Haiti such as the farm's agricultural and economic conditions. Through the field visits, the project could see the reality in the field and the information thus collected was fed into the planning process for the subsequent training program.

3-2 Roles of External Actors and Approach toward CD Assistance

Now we look at the role of external actors in a project aimed at improving agricultural techniques in Haiti.

The role of the JICA expert in the project can be described as both that of a facilitator for all project members and that of a complementary coordinator for key project activities. As touched on above, the project made numerous efforts to meet the needs in Haiti, including the follow-up actions in Haiti, the preparation of textbooks in Creole which is the Haitian local language, and joint selection of trainees. These efforts have further improved the quality of the project and made possible the smooth collaboration among the project members with the assistance of the JICA expert.

The JICA expert and ISA University counterpart nurtured an equal partnership, jointly overseeing training through continuous and close mutual exchanges involving the program management and content. Through such close exchanges as the equal partner, the members from ISA University started to further strengthen their sense of commitment to the program. They became increasingly eager to be involved in the management of the training.

3-3 Facilitating Mutual Learning and Collaboration

Because many of the trainees use Haiti Creole as their common language, the project prepared Creole text materials from materials written by training lecturers in Spanish. These materials incorporated numerous examples explaining the new techniques discussed in training, such as drip irrigation; therefore, the materials can be used as tools for dissemination.

As explained earlier, the project's careful selection of training participants was a key factor in ensuring effective learning. Taking advantage of the recruitment training seminars organized in Haiti, applicants participated in a question and answer session with the ex-

trainees. Thanks to information provided by the ex-trainees, the project received hardly any complaints later on. As for the selection of the trainees, priority was given to individuals who demonstrated a strong potential. As for candidates from NGOs, the project made it a rule to accept applications both from the local and the international NGOs.

As mentioned above, a number of small opportunities or "Ba" for networking were consciously organized throughout the program as well as in the follow-up phase. At the initial stage, particular care was taken to ensure rapport building among the participants. This fostered a sense of the participants being a team during the one-month training. The program organized a wrap-up workshop which offered the opportunity for all the participants to share and mutually discuss the action plan that each participant prepared for the follow-up activities upon his/her return to Haiti. With the help of these program designs, most trainees have been continuing to exchange information and lessons learned through practice even after their return to their fields in Haiti.

4. Conclusion

Though the project we have examined is one with a modest input and a short time frame and while it is still too early to make a definitive evaluation, several encouraging signs are evident. Most typical is the continued enthusiasm and commitment to the project demonstrated by the Haitian workers, despite their harsh working environment. The project has also produced tangible outcomes, though, given the conditions the Haitian farmers face, obviously much remains to be done. Among the points examined in the case analysis above, three conditions seem to have been of utmost importance in contributing to the thus-far satisfactory trajectory of the project.

First, so long as the project is designed to help impact or generate the kind of knowledge and skills that are directly linked to the needs of the beneficiaries, it is likely to succeed.

Second, if practitioners who share similar problems or missions meet and foster a relationship of trust, and if they are given adequate facilitation and opportunities, they will continue to build a network of learning. New and innovative ideas can be born when information and experiences are exchanged through this network. The information exchanged at these meetings will then help trainees when they return to

their workplace. Bonded by this network, the members maintained contact; thus, the atmosphere remains friendly. The time and space the trainees used to exchange and share information became "*Ba*", and the idea of holding a seminar for the extension officers that could not take part in the training was born.

Third, as stated above, such knowledge creation cannot happen by chance; it must be supported by careful and continuous efforts of coordination and facilitation.

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Case 7

Tackling Regional Challenge of Livestock Hygiene in South America through the Development of Professional Network

Yukako Inamura

1. Introduction

This paper looks at the "Project of the Capacity Development for Improvement of Livestock Hygiene in the Southern Part of South America through Regional Technical Cooperation". The aim of the project is to enhance the capacity of researchers and university faculty members to improve livestock hygiene in South American countries by means of veterinary epidemiology and disease diagnostic methods. Participants of the projects were Argentina, Bolivia, Paraguay, and Uruguay. Japan played a catalyst's role.

The project started in 2005. It adopted the distinctive approach of promoting regional network of university-based veterinary professionals for active mutual exchanges of information, knowledge and experiences. Through its five-year project activities, the project has attained several achievements. At the country level, for instance, participating scientists have acquired knowledge and skills of the latest diagnostic methods on animal diseases. Furthermore, they disseminated the knowledge to a broad range of stakeholders, including field veterinarians and livestock farmers. At the regional level, the network members have undertaken joint research activities and widely shared their research results with the veterinary professionalsin the region.

In the following Section 1, we first outline the background and development process of the professional network through the project. Section 2 then examines key success factors in the process that regional and country-level actions for the improvement of livestock hygiene has thrived and be sustained by development of a professional network. In Section 3, the author provides implications based on the case.

2. Overview: A Challenge of the Regional Cooperation

2-1 Background: The Expansion of Economic Connections and the Threat of Animal Diseases

In the Southern part of South America, the liberalization of trade was progressing among the members of the Southern Common Market (MERCOSUR). MERCOSUR established in 1991 was an economic and political agreement, aimed to promote free trade and the free mobility of goods, people, and currency.[1] As part of the activities, in 2003, MERCOSUR entered into a Free Trade Agreement (FTA) with the Andean Community (CAN)[2] as a customs union established in 1969. Thus, the economic linkage of the region was being widened and strengthened. The expansion of regional economic connections greatly stimulated the livestock industry, which was one of the most important industries in the region, and rapidly promoted animal product export within and beyond the region.

However, the promotion of such economic partnerships brought the risk of animal diseases spreading beyond national boundaries. Should an outbreak occur, it would damage not only livestock and farmers' economy, but also greatly influence the national economy. In the case that it spread to neighboring countries, it also would damage their economies. In fact, when an outbreak of foot-and-mouth disease (FMD) occurred in the early 2000s in the region, other countries imposed bans on imports.[3]

In addition, economic damage was not the only problem that would result from animal diseases. There were zoonoses, such as bovine spongiform encephalopathy (or ovariant Creutzfeldt-Jakob disease), rabies, and highly pathogenic avian influenza, which could be transmitted between animals and humans. The poor counter-measures to animal diseases could threaten human health.

Therefore, various international organizations formed political frameworks and standards concerning animal health. For instance, the World Organization for Animal Health (OIE) prepared a list of animal

[1] The full members are Argentina, Brazil, Paraguay, Uruguay, and Venezuela, and the associate members are Bolivia, Chile, Colombia, Ecuador, and Peru.

[2] The full members are Bolivia, Colombia, Ecuador and Peru, and the associate members are Argentina, Brazil, Paraguay, Uruguay, and Chile.

[3] JICA 2006, p. 149.

diseases, including zoonoses, technical disease cards, and regulations on how to deal with them.[4] The OIE, the FAO, the Pan American Health Organization, the World Health Organization (WHO/PAHO), and the Inter-American Institute for Cooperation on Agriculture (IICA), worked in the field of animal health in South America. The World Trade Organization (WTO) also created provisions on the trade of plants and animals, the so called Sanitary and Phytosanitary Measures (SPS), so as to be able to take the appropriate measure should an outbreak occur.[5]

However, most of the activities conducted by these international organizations were limited to establishing standards, providing guidance and advice, and exchanging information. In many cases, the implementation of specific measures and the introduction of special techniques for the prevention of animal diseases were often left to national efforts.

Therefore, counter-measures of countries were of mixed standards and coverage. For the animal diseases listed by the OIE, each country formed their own national guidelines and conducted various activities for preventing them: diagnosis, diagnostic medicine production, insect control, vaccinations, and public relations activities supporting regional communicable disease control. The levels and degrees of these activities often depended on their socio-economic-political circumstances.

International donors provided loans (e.g. Inter-American Development Bank) and technical support (e.g. International Atomic Energy Agency (IAEA)) for the development of animal health and the prevention of animal diseases.[6] For instance, the IAEA provided Enzyme Linked Immunosorbent Assay (ELISA) kits to diagnose and control animal diseases. However, the improvement of knowledge and techniques was not sufficient at the field level.

[4] OIE 2012a.

[5] WTO 2010. According to the SPS, the OIE has decided on international standards for animal health (WTO 2010, pp. 18-19). The OIE sets the international standards, namely the Terrestrial Animal Health Code (the Terrestrial Code), which includes standards for safe international trade in terrestrial animals and their products (OIE 2012b).

[6] JICA 2003, pp. 10-25.

2-2 Region-Wide Challenges for Animal Health

(1) The formation of an idea of the regional cooperation[7]

Being ahead of its neighboring countries in animal disease measures, Argentina, along with Brazil, had one of the reference laboratories of the OIE,[8] which had been established as a center of expertise to standardize diagnostic techniques for its designated diseases. In the laboratories of both countries, experts conducted inspection, set regulations, and provided recommendations in collaboration with neighboring countries. In Argentina, the National Institute of Technology-Agricultural Quarantine and Sanitation Services (SENASA) was appointed as an OIE laboratory. The SENASA, together with the National Institute of Agricultural Technology (INTA) and the Faculties of Veterinary Sciences of eight national universities,[9] worked for the improvement of diagnostic methods, vaccinations, and public relations activities for communicable disease control in Argentina. It was the National University of La Plata (UNLPVS) who undertook the education of the staff of the SENASA and played a key role in maintaining animal health in Argentina.

The Faculty of Veterinary Sciences, the UNLPVS (FCV-UNLP), had a close relation with Japan. For example, the Japan International Cooperation Agency (JICA) provided support to the FCV-UNLP through a five-year technical cooperation and a two-year follow-up cooperation starting in 1989. The main purpose of this cooperation was to contribute to the development of the livestock industry by strengthening their basic research activities.[10] Consequently, the FCV-UNLP established excellent research facilities and human resources in South America. The FCV-UNLP developed its capacity to the point that they were able to share their advanced skills and experiences with neighboring countries where there was a growing demand for knowledge and techniques.[11]

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[7] JICA 1996.

[8] As of 2011, the OIE has established 225 Reference Laboratories in 37 countries (OIE n.d.).

[9] The SENASA had responsibilities for the quarantine of animal diseases, sanitary regulations, and the supervision and inspection of slaughter houses and meat facilities. The INTA was established for the purpose of agricultural technology reform and the research and dissemination for the development of farmers and corporations, and had branches throughout the country. The eight national universities were located in areas where livestock productivity was high.

[10] JICA 1993.

[11] JICA 1996, p. 13.

In those days, the Government of the Argentine Republic (GOA) was starting to consider implementing regional cooperation in the field of animal health. In 1992, the GOA who had had a long history of international cooperation as both a receiver and provider of assistance in several areas established the Argentina Fund for Horizontal Cooperation (FO-AR) in order to share knowledge and experiences through training and the transfer of skills with the countries of the region.[12] It was compatible with the national policy indicated in the FO-AR to cooperatively work to solve animal health problems as a long concern among the countries of the region. This also would contribute to the Argentinean economy and the health of their citizens. The GOA conducted international training with support from donors.

Japan through JICA also supported such GOA's goals. In cooperation with JICA, the GOA through the FCV-UNLP provided training in the Diagnosis and Research of Animal Diseases to neighboring countries from 1996 to 2000 (the first phase) and from 2001 to 2005 (the second phase). When the second phase started, Japan came to further support the national policy of the GOA. In 2001, the two countries signed The Partnership Programme for Joint Cooperation between Japan and Argentina (PPJA)[13], a framework for the cooperation to jointly support economic and social development of other Latin American countries. Under the PPJA, Japan assisted the GOA to conduct international training in various areas, including animal health, and dispatch their experts to other countries.[14]

Training on Diagnosis and Research of Animal Diseases[15]
Participants (Phase I 1996-2000): Bolivia, Brazil, Chile, Paraguay, Uruguay, Ecuador, Costa Rica, Cuba, Nicaragua, Mexico, Guatemala
Participants (Phase II 2001-2005): Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, Paraguay, Uruguay, Venezuela

The aim of the training was to provide an opportunity for Central

[12] PAHO/WHO and Ministerio de Relaciones Exteriores, 2009, p. 9. About 3,600 activities have been implemented under the FO-AR (INSOUTH n.d.).

[13] In 2005 when the original period had been expired, the PPJA was extended after evaluation.

[14] JICA 2005.

[15] JICA 1996.

and South American countries to improve knowledge and techniques of veterinary diagnosis. Participants were university graduates in veterinary science (veterinarians) and had experiences of more than two years in related fields. A six-week training program was divided into two: 1) three-week introductory courses for all participants to learn the general concepts of ten themes (i.e. immunology, biochemistry, laboratory animals, microbiology, virology, parasitology, genetics, pathology, physiology, CEDIVE) and 2) three-week specialized courses for individuals to enhance their knowledge and research methods in selected themes. This training was highly evaluated by the participants. Through this training, the FCV-UNLP developed their capacity to play a key role in animal health in the region.

When the GOA was conducting the training of the Diagnosis and Research of Animal Diseases, the idea of establishing regional cooperation emerged. In the early 2000s, outbreaks of FMD were reported in South American countries, such as Bolivia, Uruguay, Argentina, and Paraguay. This highlighted the different degrees and levels of counter-measures taken by these countries. It was becoming an important, urgent issue for the countries of the region, who had been largely preoccupied with monitoring the border of their own countries, to strengthen their capacities to deal with trans-boundary diseases.

Under these circumstances, a basic survey was conducted in 2003 to identify the situations and problems of prospective countries for regional cooperation. The mission members of the survey visited Argentina, Uruguay, Paraguay, and Bolivia who were both participants of the Diagnosis and Research training and MERCOSUR.[16] Following the basic survey, two preliminary surveys were conducted in 2003 and 2004. Through these surveys, the prospective countries elaborated on an idea of regional cooperation for the development of animal health, by maintaining and utilizing training results, although their national risk priorities of animal diseases and capacities varied.

The three surveys and a series of following discussions among stakeholders

[16] With concern over the excessive expansion of targeted countries, Brazil who had a vast land was excluded in this regional cooperation (JICA 2003, Appendix pp. 37-38).

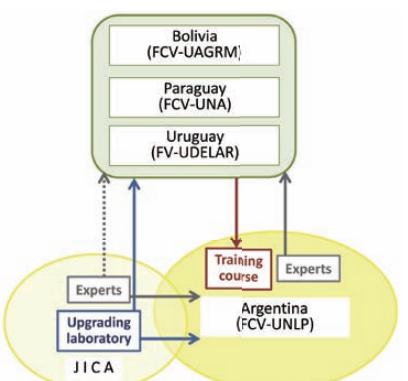
defined the direction for regional cooperation. The three surveys identified specific local conditions needed to maintain activities and continue to manage both animal and human health after the cooperation. It seemed neither sufficient nor efficient to focus on only the improvement of diagnosis techniques. For the sustainability of activities, it was thought to be more effective to develop human resources with the ability to conduct proper veterinary diagnosis in the region, and create some mechanism in which they would keep improving their knowledge and skills.

(2) Regional cooperation of the four universities

The regional cooperation called the Project of the Capacity Development for Improvement of Livestock Hygiene in the Southern Part of South America through Regional Technical Cooperation (PROVETSUR) started in August 2005 under the framework of the PPJA.[17] Four universities from the four countries participated as implementing agencies: the FCV-UNLP in Argentina, the Faculty of Veterinary Science, Autonomous University of Gabriel René Moreno (FCV-UAGRM) in Bolivia, the Faculty of Veterinary Science, the National University of Asunción (FCV-UNA) in Paraguay, and the Faculty of Veterinary Medicine, the University of the Republic (FV-UDELAR) in Uruguay. The selection of universities rather than national laboratories was because of the priority given to human resource development. Like the FCV-UNLP,

Figure 1: Participants of the PROVETSUR

Figure 2: Structure of the PROVETSUR



[17] The participation of Uruguay was in 2006 due to necessary administrative arrangement with the government (JICA 2006, pp. 8-9).

Bolivia: Survey on rabies virus antibody valency (assessing the age of a dog by dentition)

the faculties of the other three universities, also had had experienced cooperating with JICA in the areas of livestock production and animal health.[18]

The activities of the PROVETSUR consisted of two layers. In the regional level, the PROVETSUR aimed to establish a mechanism of continuing professional education for veterinarians and develop networks of mutual cooperation and of sharing diagnostic and epidemiological information. These were crucial activities for the four countries to continuously develop their capacities for dealing with animal diseases.[19] The targets at the national level were to strengthen the capacity of Argentina's FCV-UNLP as a regional veterinary center for providing professional education and for improving the capacities of veterinary diagnosis of the other universities. Their final goal was to contribute to the development of animal health through proper implementation of veterinary diagnosis in the region.

Uruguay: Survey on antibody to Infectious diseases induced miscarriages (Sampling blood from sheep)

The implementing mechanism of the PROVETSUR was designed to make smooth coordination among a number of stakeholders. A project secretariat was located in the FCV-UNLP as a pivotal institution, which would provide international training for and dispatched experts to the other three universities. In the secretariat, there were three coordinators for Bolivia, Paraguay, and Uruguay, and administrative staff members. Each faculty of the three universities appointed one country coordinator for necessary coordination with the secretariat. One Japanese long-term expert who stayed in the secretariat circulated the three countries regularly. In so doing, he provided necessary advice face-to-face and

[18] JICA 2006, pp. 160-161.

[19] JICA 2006, p. 16.

support to the stakeholders. All four universities annually held a joint coordinating committee (JCC) in order to discuss an annual plan and related issues. Though it took some time before the JCC became fully functional and the implementing mechanism of the project under the JCC contributed to enhancement of smooth communication among the stakeholders.

Equipment and materials were provided by JICA and were used to develop each university's laboratory for appropriate diagnosis and research activities. They chose equipment for diagnosis that was particularly easy to maintain. Materials such as reagents were procured locally.[20]

Paraguay: Survey on *salmonella* (sampling specimen)

PROVETSUR covered various diseases. Workshops and interviews with the stakeholders during the second preliminary survey revealed the different countries' differing priorities of animal diseases to cover. Their priorities were: rabies in Bolivia, gumboro disease in Paraguay, and avian and equine influenzas in Uruguay.[21] Given the mixed priorities, it was decided not to have specific common targeted diseases. Consequently, each country started to work to improve diagnostic techniques for the diseases which had priority.

The targets and activities of the PROVETSUR were changed in the middle of the five-year implementation as shown in Figure 3, to clearly distinguish regional and national targets and activities, which were not clearly separated at the beginning, causing confusion in the participating universities.

[20] An interview with the Japanese long-term expert.

[21] JICA 2006, pp. 164-165. It was examined to set the prevention of FMD as a common task at the very beginning of the formation of the project. However, there was a great risk to research on FMD without proper laboratories of the bio safety level 3 in the international standard, which the four countries did not have. The outbreak of FMD, which could trigger ban on export and damage national economy, might cause political disputes among countries. Therefore, despite the importance of its prevention, FMD was excluded from the targeted animal diseases of each country (JICA 2010, p. 35).

Figure 3: Relations between Regional and National Targets and Activities

In the new structure, the regional and national targets and activities of each country were separated. One regional and four national targets were set. For instance, at the national level, the three universities aimed to develop the capacity of diagnosis for their priority diseases by receiving training from the FCV-UNLP, while the latter also improving their capacities by providing training. At the regional level, all of them participated in activities that would contribute to the region, such as joint research and sharing results. The FCV-UNLP took the main responsibility for managing the regional level activities. The overall goal was modified to promote the professional education of veterinarians in order to improve their veterinary disease diagnosis in the region.

2-3 Consequence: Towards the Strengthening of a Regional Network[22]

(1) Regional level: Cooperation and network construction

The formation of a network and its expansion

The PROVETSUR provided a precious opportunity for the four countries to create a network among them. Although they were members of MERCOSUR and the CAN, there had been little practical regional cooperation and coordination in animal health until the start of the PROVETSUR. However, the activities of the PROVETSUR promoted regular personal face-to-face interactions among the faculty members and students of the four universities, which resulted in the formation of a network. The network is currently still utilized for joint activities, such as the publication of joint research papers.

The members of the network are also gradually expanding their activities beyond the PROVETSUR by connecting it with other networks. For instance, the Iberoamerican Society of Veterinary Epidemiology and

[22] JICA 2010, pp. 35-37.

Preventive Medicine (SIEVMP) was established by responding to the call of Professor Dr. Andre Perez in 2009.[23] The FCV-UNLP, together with the Regional International Organization for Plant Protection and Animal Health (OIRSA) in El Salvador, is managing the information network of the SIEVMP. Many university researchers who participated in the PROVETSUR have joined the SIEVMP and have been sharing the fruits derived from the former's activities with the latter's academic members. By making a bridge with other network(s), the scale of the network of the PROVETSUR is growing little by little within and beyond the region.

The improvement of the research level in the region

During the PROVETSUR, the research level of the faculties of the four universities was significantly improved. One of the focused activities was to prepare and distribute epidemiological information, since it was considered an effective research activity for planning and implementing the comprehensive counter-measures of animal diseases at the national and regional levels.[24] Epidemiological methods that mainly rely on non-laboratory methods were more fitted to the conditions of the four universities, whose laboratories lacked the latest equipment. This, in turn, provided researchers with an incentive to write academic papers based upon data collected through fieldwork and sampling. More than 25 regional research groups were formed, consisting of mixed faculty members of the four universities. They published a number of research papers in academic journals, including well-known international ones. As of 2010, the following number of papers and reports were published.[25]

Table 1: A Number of Publications (as of 2010)

	Argentina	Bolivia	Paraguay	Uruguay
Papers (peer-reviewed)	17	4	3	2
Reports	3	-	2	5

These research outputs were shared through the website of PROVETSUR and with presentations in conferences, and contributed to the enhancement of knowledge on animal health in the region.

[23] JICA 2010, p. 22. The headquarters of the SIEVMP is in Chile.

[24] JICA 2010, pp. i-ii.

[25] JICA 2010, pp. vii-ix.

(2) National level: Development of human resources

Development of veterinary diagnosis techniques

According to their national risk priority, the faculties of the four universities developed their capacities of implementing veterinary diagnosis both at the individual staff level and at the faculty level as a group. The improvement of laboratory facilities also contributed to supporting technical development. The following table shows the major achievements for the development of the capacities of veterinary disease diagnosis, including notable outcomes, such as the preparation and dissemination of manuals and the increase of providing related services to those outside the universities (e.g. diagnosis).

Table 2: Major Achievements in Veterinary Disease Diagnosis[26]

	Obtained diagnosis techniques	Animal diseases to be diagnosable	Notable outcomes
FCV-UNLP (Argentina)	Polymerase Chain Reaction (PCR), Real time PCR*	-	- Prepared and disseminated 'The Manual of Biostatistics for Veterinary Science', which is expected to be used as a common text of biostatistics in the region. - The official approval of the veterinary epidemiology training as a course for the professional education of the faculty members of the FCV-UNLP - The increase of providing services (e.g. diagnosis, laboratory techniques)
FCV-UAGRM (Bolivia)	Hemagglutination test, Hemagglutination inhibition test, ELISA, Real time PCR, Agglutination test plate, Agar-gel immunodiffusion test	Rabies, New Castle disease, Brucellosis in cattle, Equine infectious anemia, Bovine leukemia	Reduced the number of people with rabies by effectively controlling it, in cooperation with the Veterinary Diagnostic Center (LIDIVET) and municipal authorities
FCV-UNA (Paraguay)	ELISA, PCR, Immunomagnetic separation, Morbid anatomy, Immunohistochemical staining, Separation and fixation of bacteria	Gumboro disease, *Mycoplasma* infection, Avian infectious bronchitis, Salmonellosis in poultry and pigs	The increase of diagnostic requests from outside

[26] JICA 2010, pp. 22-23.

FV-UDELAR (Uruguay)	ELISA, PCR, Indirect immunofluorescence assay	- Infectious diseases induced miscarriages in sheep and cattle: Infectious bovine rhinotracheitis, Bovine viral diarrhea-mucosal disease, *Campylobacter* disease, Trichomoniasis, Neosporosis - Poultry diseases: *Chlamydia*, *Mycoplasma* infection, Infectious *orthobacterium rhinotracheale*, Avian pneumovirus disease, Gumboro disease)	- Made an agreement with a producer association on the provision of diagnostic services of poultry disease - Prepared and disseminated a manual of diagnostic methods (e.g. ELISA, PCR, Indirect fluorescent antibody method)

* These diagnostic techniques were transferred to the FCV-UNLP by Japanese short-term experts. Then, their staff members were dispatched as experts to the other three universities in order to transfer the techniques.

Development of the national capacities of diagnosis

The faculty members who participated in the PROVETSUR have been disseminating obtained skills and knowledge through training and workshops to fellow researchers and veterinarians in the field. In Argentina, the FCV-UNLP has been providing education for faculty members, particularly junior members, to improve their diagnosis techniques and enhance epidemiological knowledge and skills. They have organized a number of seminars on various topics, from the introduction of veterinary epidemiology and the research design to individual animal diseases, for faculty members, students, staff members of related organizations, veterinarians in the field, and producers. The other three universities also conducted similar seminars. In Paraguay and Uruguay, researchers of the National Service for Animal Quality and Health (SENACSA) and staff members of the Ministry of Agriculture Livestock and Fisheries were invited in order to provide professional education and disseminate output of the project activities respectively.[27]

(3) Future tasks

It is indispensable for the four countries to cooperatively continue developing their capacities for preventing animal diseases and improve animal health in the region. This requires several actions: the systematization of professional education on the basis of the needs of

[27] JICA 2010, p. 24.

veterinarians in the field; the further development of diagnosis and epidemiological techniques among faculty members; the continual efforts of the standardization of diagnosis among countries; and the financial security of maintaining necessary materials (e.g. reagent) for diagnosis.[28] In addition, it is necessary to strengthen relationships with governmental organizations and institutions such as veterinary medical associations, in order to meet the needs of production sites by raising the overall level of the veterinary medical services. It is also important to continue supporting veterinarians by surveying their needs and monitoring the results of professional education.[29]

(4) Step forward: New challenges

The PROVETSUR opened a path for promoting regional cooperation in animal health in South America. In 2011 after its completion, a new collaboration, namely the Prevention and Zoonosis Control of South American Region, began among Argentina, Bolivia, Paraguay, Uruguay, Nicaragua, Peru, and Ecuador. Here again Argentina is acting as a pivotal country, and the FCV-UNLP is providing training. In the PROVETSUR, the selection of targeted diseases depended on each country due to their different socio-economic circumstances, risk priority, and capacities. The task of preventing common animal diseases was left as a task yet to be achieved in the future. The seven countries of the new project who had observed the activities and achievement of the PROVETSUR decided to focus on zoonotic diseases, such as leptospirosis, *Escherichia coli* infection, *salmonella* infection, brucellosis, trichinosis, anthrax, highly pathogenic avian influenza, rabies, and West Nile encephalitis. These diseases have been threatening human lives in Central and South America. The close cooperation under the PROVETSUR fostered trust among the participants of the four countries, which were encouraged to promote further cooperation among them and develop their activities with new member countries.

The cooperation of the PROVETSUR is being succeeded by another form of regional cooperation. The four universities obtained certification of regional accreditation of university education, and became members of the network of thirty universities from the seven countries of MERCOSUR, who had agreed to exchange credits among them.[30]

[28] JICA 2010, pp. xiv-xv.

[29] JICA 2010, p. 26.

[30] JICA 2010, p. 36; and JICA 2011.

3. Lessons Learned from the Case Study

3-1 Key Success Factors

(1) Ownership of the stakeholders

The ownership of the GOA and the FCV-UNLP became a driving force for the implementation of the PROVETSUR. The FCV-UNLP had been working with the GOA, for instance, by providing education to the staff of the SENASA. The implementation of the PROVETSUR was motivated by the GOA, who intended to promote the internationalization of the university, and by the FCV-UNLP, which was rich in experience and human resources in the area of animal health.

In addition, the ownership of the other three universities was also important. They actively supported the PROVETSUR by developing their diagnosis techniques and providing seminars to faculty members, students, and veterinarians in the field in each country. They also collaborated with government officials and local veterinarians. University researchers who participated in the PROVETSUR continued related research and published results of the activities of the PROVETSUR.

The four universities were not uniformly committed to the project early on. However, as the project progressed, and particularly after the reorganization of regional and national activities as well as of the JCC's mechanism, tangible achievements from activities that crossed national boundaries helped foster their commitment.

(2) Change drivers

There were several drivers behind the formation and dynamic development of the PROVETSUR.

Outbreaks of FMD

The outbreaks of FMD in the Southern part of South America in the early 2000s highlighted the importance of maintaining animal health in the region. The countries of the region directly felt the dangers of animal diseases to their economies and to the health of their citizens.

Socio-political frameworks of regional cooperation and international standards

The existence of socio-political frameworks of regional cooperation, such as MERCOSUR and the CAN, contributed to establishing quick linkage among the four countries and motivating them to work together for the benefits of the region, as well as their own. Existing international

standards, such as the OIE list and technical disease cards, also became guidelines for them to conduct their activities.

Flexible adaptation of young researchers
Junior researchers at the four universities had the flexibility to try epidemiological and other methods introduced by the Japanese experts, and were encouraged to publish findings based on statistics and data obtained through fieldwork. Successful publication in international journals not only greatly stimulated other junior researchers but also motivated senior researchers in the region.

(3) Learning in the process of the cooperation
A virtuous circle of learning through publications
During the PROVETSUR, the faculty members of the four universities changed their ways of thinking and expanded their research activities by using epidemiological methods and jointly working with fellow researchers in the region. Researchers, particularly senior ones, of the four universities had not thought much about publishing papers in leading academic journals, given their working environment lacked sophisticated equipment. However, the performance of young researchers who successfully started to publish peer-reviewed papers encouraged senior researchers to do the same.

Such successful publication in international journals brought about a virtuous circle of learning. Through publication, researchers of Bolivia, Paraguay, and Uruguay, as well as Argentina, could obtain opportunities for joining in the international academic circle crossing national boundaries. Research results were also presented and shared with fellow researchers in various seminars and conferences, such as the SIEVMP. They could exchange research results and views with researchers of other countries, which consequently contributed to develop their knowledge and research level. Their research activities expended. In so doing, the gap of their research level gradually narrowed. As a result of this, they have more opportunities to participate in joint research activities and publish papers.

From competition to cooperation through face-to-face interactions
The activities of the PROVETSUR enabled them to find and understand the great merits of regional cooperation. Before the implementation of the PROVETSUR, the framework of MERCOSUR in the area of animal health

meant only competition among the members.[31] The assumption changed with the progress of the project. The member countries learned that they could obtain actual benefits from the regional cooperation and mutual support.[32] The cooperative relationships of the four universities have been constructed through individual face-to-face interactions, rather than institutional ones, in frequent international training in the FCV-UNLP and national training conducted by dispatched Argentinean experts.[33] In so doing, they fostered trust among them, which created the friendly circumstance in which they could consult with each other and exchange opinions. These experiences consequently lead them to form the new project mentioned above. In 2010, participants said that with support from Japan as a bridge, MERCOSUR changed to a framework of cooperation.[34]

(4) Mutual learning

Knowledge transfer was not a one-way flow from the FCV-UNLP as a pivotal institution to the other three universities. SENACSA in Paraguay dispatched two experts to Bolivia's FCV-UAGRM. With their support, the FCV-UAGRM was able to obtain the technique of producing the diagnostic reagents for brucellosis and became able to produce three kinds of diagnostic reagents.[35] The FCV-UNLP also learned from the other three universities. By participating in the project, they could accumulate experiences and know-how of providing training and managing a regional cooperation project. Thus, mutual learning occurred among the members.

3-2 Support for the Network Creation

(1) Strengthening a network through the enhancement of communication

The FCV-UNLP as a main pivotal institution effectively combined different types of training, by responding to the needs and requests of the other three universities. Within Argentina, the FCV-UNLP provided both group-training with the combination of classroom lectures and practices for all three universities, and individual training with the focus of specific technique(s) for individual universities. They also dispatched experts to each university and transferred techniques

[31] JICA 2010, p. 30.
[32] JICA 2008, p. 37.
[33] JICA 2010, p. 30.
[34] JICA 2010, p. 30.
[35] JICA 2010, p. 23.

through on-the-job training.[36] Regarding some of the latest diagnosis techniques, such as PCR and Real Time PCR, the FCV-UNLP cooperatively worked with Japanese short-term experts. After Japanese short-term experts had provided guidance to the faculty members of the FCV-UNLP, they transferred their obtained knowledge and skills to the other three universities. The combination of these different training programs was very effective and efficient in raising the capacities of diagnostic knowledge and techniques in the three countries, and in the region as a whole. Consequently, face-to-face interactions through these training programs contributed to the enhancement of communication among participants, fostering of mutual trust, and strengthening of their network.[37] The FCV-UNLP also could enrich their experiences as a provider of international training.

Staff members of the FCV-UNLP, who were learning from a Japanese short-term expert.

In addition, the strengthened monitoring process used during the project, which included a reinforced quarterly reporting mechanism, further facilitated the development of the network and the management skills of the FCV-UNLP. Through such actions, the FCV-UNLP, together with the secretariat, were able to prepare an even more strategic annual plan for the PROVETSUR's activities. The annual plan was intensely discussed and agreed to by the four universities in the JCC. This reflective and continuous improvement of project management significantly contributed to the project's achievements.[38] Enhanced communication made possible through training, and the monitoring process resulted in smooth cooperation between the four universities, which also helped consolidate their network.

(2) Bridge making, clear objectives, and visualized outputs

Japan through JICA played a role of catalyst. As stated before, there was little cooperation in animal health in the region before the implementation of the PROVETSUR. JICA had previously provided bilateral assistance in animal health for the four Spanish-speaking countries and recognized the

[36] JICA 2010, p. 23.
[37] JICA 2010, p. 36.
[38] JICA 2010, p. 26.

potential for regional cooperation. This facilitated the creation of a practical linkage among the countries and promoted regional cooperation. During the PROVETSUR, both long- and short-term experts from Japan assisted the FCV-UNLP, which conducted a variety of training activities for the other three universities. Particularly, at the early stage of the project, the Japanese long-term expert played an important role in connecting the four universities, who had not yet developed a strong sense of trust.[39] He assisted the FCV-UNLP in organizing the JCC and making it functional. His regular visits to the three universities also helped the FCV-UNLP, which was still developing its management capabilities, to maintain and strengthen the whole network. This kind of direct support in linking the four universities and the assets of bilateral cooperation contributed to the overall activities of the PROVETSUR and resulted in a good combination of bilateral and regional cooperation.

In addition, JICA successfully motivated individual participants by introducing a clear structure with visualized output at both the national and regional levels. It is easy for individuals placed in a regional cooperation framework to lose sight of the bigger picture. Therefore, the creation of an easy-to-understand structure for project implementation was an effective means through which individual members could understand how their daily activities connected to overall output and outcome as well as to individual and regional benefits. The knowledge and techniques required for the PROVETSUR were explicitly defined. The publication of papers and reports also helped the visualization of outputs derived from daily activities. The outputs were also modified (e.g. translated into Spanish) and widely shared with other researchers and veterinarians through the project website and conferences. This approach helped elucidate the benefits of cooperating regionally to the four universities and consequently provided motivation for them to maintain the network.

4. Implications

This case study provides some implications for future effective cooperation.

The importance of fostering a common vision by linking national and regional activities

It is important to foster a common vision among stakeholders to ensure

[39] JICA 2010, p. 25.

effective implementation of regional cooperation. At the beginning of the PROVETSUR, the linkage of national and regional activities did not seem to be sufficiently defined for stakeholders. The four countries also had little experience in regional cooperation and had different national risk priorities. In response to a mid-term review of the PROVETSUR, the structure and implementation mechanism of the project were revised and revitalized. This enabled individual participants to obtain a clear understanding of actual outputs/outcomes and understand the connection between the daily activities in each country and the meaning of the activities at the regional level.

The necessity of sufficient preparation in forming an effective mechanism of implementation and coordination

Since it essentially involves a larger number of stakeholders, regional cooperation often requires a longer time than bilateral cooperation to design and initiate an effective mechanism of implementation and coordination. For the PROVETSUR, the four universities worked together with the Japanese long-term expert and spent a certain amount of time constructing a practical, workable mechanism for implementing and coordinating related activities, making the JCC function properly, and introducing a monitoring system.

Mechanism for promoting communication and strengthening networks

The preparation of a mechanism for promoting communication among participants is very important for regional cooperation, especially when the participants have divergent socio-economic-political situations, interests, and capacities. Smooth communication is the first step in fostering the trust necessary to construct a solid network and attain expected outputs. A variety of activities in the PROVETSUR provided such a mechanism, including personal face-to-face interactions through attending international training in the FCV-UNLP in Argentina, dispatching Argentinian experts to the other three universities, the circulation of the Japanese long-term expert, and the participation in academic conferences held in the region.

Bringing productive, inclusive competition through visualized outputs in the region

The introduction of a certain level of competition in a project sometimes encourages productive outputs by enhancing mutual learning among participating countries. The PROVETSUR successfully utilized publication

as a tool for motivating participating researchers to form regional research groups and activate research in the region. This also became an alternative to funds and equipment as an incentive to maintain activities.[40] Some kinds of visible, clear objects can stimulate participants' motivation and bring about productive, inclusive competition in the region.

Political and policy framework and resources for the promotion of regional cooperation

Favorable political and policy circumstances are important for the promotion of regional cooperation. The existing regional cooperation frameworks, such as MERCOSUR and the CAN, provided a political foundation for the formation of the PROVETSUR. Simultaneously, Argentina had the FO-AR as a national policy for promoting horizontal cooperation. Under the PPJA, Argentina and Japan also agreed to work together for the development of South-South and triangular cooperation. Moreover, in Argentina, there were several institutions, such as the FCV-UNLP, the SENASA, and the INTA, which with their accumulated knowledge and expertise are capable of providing support to neighboring countries in the area of animal health.

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Case 8

Japan-Brazil Partnership Program: A Framework for Triangular Cooperation

Kota Sakaguchi

1. Introduction and Overview

This paper will attempt to give a bird's eye view of the Brazil-Japan bilateral process and framework in the Triangular Cooperation developed over the decades between the two countries. In so doing it will present some representative projects, including the ones touched on in other parts of this volume (in Chapter 3 and 4 and in Case 9).

The cooperation between Brazil and Japan has been developing through several stages. The first phase started in 1985, when the two countries started implementing triangular cooperation by means of what is called "third country training programs." The primary intention of the arrangement was to capitalize on the accumulated achievements and outputs of the bilateral cooperation carried out since 1958. Covering mainly the agriculture, health, vocational training and environmental sectors, the programs were mainly targeted atLatin American countries and Portuguese speaking African countries.

Collaboration between the two countries entered a new stage in 2000 when they introduced the Japan-Brazil Partnership Program (JBPP), seeking to conduct triangular cooperation based on a more equal partnership. Based on this framework, Brazil and Japan jointly formulated and implemented two new training programs.

Fuller cooperation enabling large scale joint projects became possible in the mid 2000s. In a high-level meeting held in April 2007, Sadako Ogata, then President of the Japan International Cooperation Agency (JICA), and Celso Amorim, Foreign Minister, Brazil, agreed that they would implement projects jointly in Africa. As the result of this meeting, JBPP proceeded to enter a full-scale execution stage. The first joint project was entitled "Training for Capacity Building of Josina Machel Hospital," which started in Angola in October 2007. In 2010, the two partners developed a new concept, the "Japan-Brazil Global Partnership for the

solution of global issues," under JBPP. Over a period of approximately five years from the commencement of the first joint project in October 2007 to November 2012, JBPP realized 13 joint projects, 14 joint seminars, and 17 new third-country training courses. Not only has the number of joint activities been increasing, but the scale of each project has been expanding dramatically in terms of human resources, budget and materials, in such a way that projects under JBPP produce large and positive impacts for the development of the beneficiary countries.

2. Japan-Brazil Triangular Cooperation

2-1 Trends in International Cooperation between Japan and Brazil

While Japan's budget for international cooperation has been following a declining trend in recent years, Brazil's technical aid budget practically doubled every year between 2008 and 2010, reaching a record of approximately 90 million reals (about $US 45 million) in fiscal 2011.[1] The number of Brazil's partner countries has reached about 70. The basic position of Brazil, which calls itself a development partner rather than a donor, is that it will implement and promote South-South and triangular cooperation that is directly reflected in its foreign policy. Brazil regards this as a tool to achieve its diplomatic strategy.

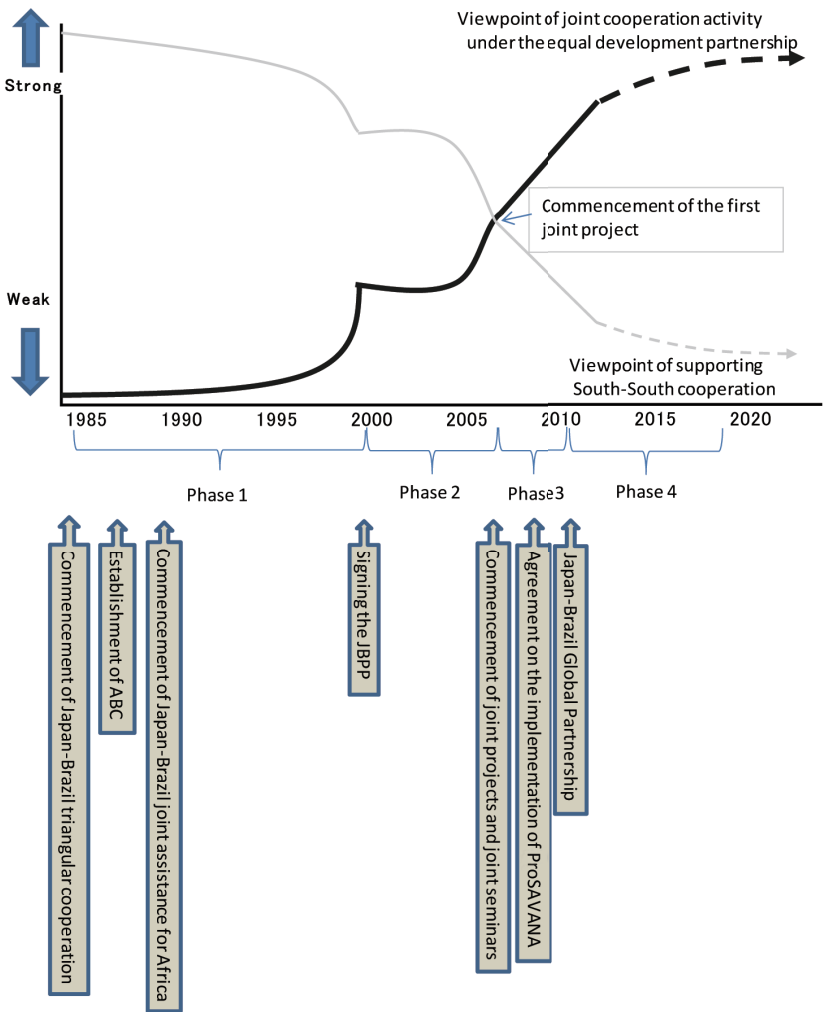
Despite the increase in overall size of projects and budgets, Brazil is still in the middle of developing in terms of its capability and systems for implementing cooperation programs for the following reasons: it has yet to establish overseas offices specialized in international cooperation;[2] almost all decisions are made in Brazil rather than in beneficiary countries; Brazil still doesn't have its own system of accounting and procurement and uses the United Nations Development Programme (UNDP) systems; and methods of formulating, monitoring, and evaluating projects are still under development. Triangular cooperation with Brazil, in the spirit of cooperation under the equal partnership, has been useful in strengthening Brazil's capacity in international cooperation by making the traditional donors' experience and method of international cooperation available.

[1] Brazil's technical aid budget normally includes the travel cost and daily allowance of dispatched Brazilian experts and trainees from beneficiary countries but not such items as Brazilian experts' salary and technical fees. (There exist exceptional cases.) If these expenses were included, the actual budget of technical aid would be five to ten times higher than the above figure (however, there is no statistical data for this).

[2] The contact in recipient countries is the Brazilian embassy.

As Brazil's capacity to provide international cooperation developed over the period, the meaning of JBPP for Japan has also changed; in its early years, Japan used to view JBPP primarily as a means of supporting Brazil in its capacity development for conducting SSC. In later years, however, with Brazil's ever-growing capacity as an international cooperation provider, JBPP has transformed itself into an equal partnership by which the two countries can cooperate to extend effective development cooperation.

Figure 1: Changes in the Meaning of JBPP Seen from Japan's Perspective: From Brazil's Capacity Development for SSC to Equal Partnership



2-2 Brazil as a Partner in Triangular Cooperation

While Japan has been a strong proponent of South-South cooperation and triangular cooperation since the 1970s and was a forerunner in teaming up with Brazil, other donors, too, have begun actively being engaged in triangular cooperation programs in recent years. Countries such as Germany, the United States, France, Italy, Canada, Spain, and Israel have been strategically implementing triangular cooperation programs with Brazil. Also, the UK has recently been formulating projects. UN agencies are working with Brazil to implement South-South cooperation projects. Thus more and more actors are coming to team up with Brazil as a strategic partner in triangular cooperation. I believe the donor countries' intentions behind these movements are as follows:1) to make use of Brazil's rich body of technology and experience; it has one of the world's highest levels of resources that can be used for development cooperation in terms of technologies developed in and applicable to tropical areas; and 2) to strengthen their bilateral diplomatic relationship with Brazil, which is experiencing strong growth as an emerging country.

Motivated by these and perhaps by other factors, many countries are showing a high level of commitment in the strategic promotion of projects. For example, US Secretary of State Hillary Clinton signed a framework document to promote triangular cooperation with the Brazilian government in 2009.

Meanwhile, Brazil seems to be promoting triangular cooperation against the backdrop of and for the purpose of the following: 1) to take advantage of the technologies and funds coming from developed donor countries for the implementation of projects with large potential impacts; 2) to learn developed donor countries' methods and know-how in international cooperation management; and 3) to strengthen its bilateral relationship with partner countries which are generally traditional developed donor countries.

3. Japan-Brazil Triangular Cooperation

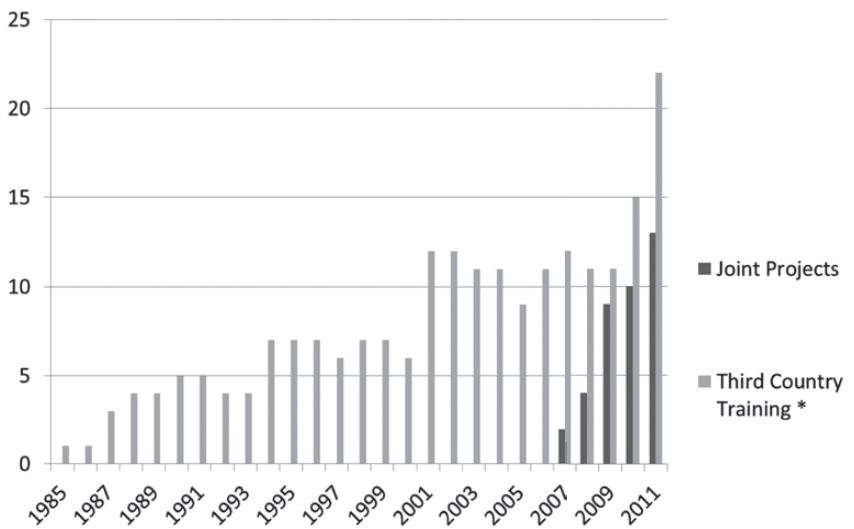
As stated above, the history of Japan-Brazil triangular cooperation can be divided into four phases (see Figure 1 for changes in the number of projects):

- ✓ Phase 1 (from the 1985 commencement of third-country training, "The Electrical and Electronics Course," to March 2000);

- ✓ Phase 2 (from the signing of JBPP in March 2000 to April 2007);
- ✓ Phase 3 (from the meeting of Ms. Ogata and Mr. Amorim in April 2007 to June 2010); and
- ✓ Phase 4 (from the launch of the "Japan-Brazil Global Partnership for the solution of global issues" in June 2010).

Japan-Brazil triangular cooperation grew dramatically in Phase 3, and the current theme of JBPP is "global issues," or more specifically: "food security," "environmental measures and climate change remedies," "measures to improve health and prevention of infectious disease," "enhancing good governance and public security," and "disaster prevention." Some examples are described below.

Figure 2: Number of Projects Implemented under Japan-Brazil Triangular Cooperation



*number of courses provided annually

3-1 Triangular Cooperation Programme for Agricultural Development in African Tropical Savanna Among Japan, Brazil and Mozambique (ProSAVANA-JBM)

Japan and Brazil implemented international cooperation projects for the development of the tropical savanna in Brazil called the Cerrado, for more than 20 years (since the late 1970s). These projects have been changing the barren earth into the world's largest green belt and have greatly helping to stabilize global food prices and food supply. The

ProSAVANA program is designed to create market oriented agricultural development models while securing the coexistence of small to large scale farmers with environmental consideration and measures for Africa's savannah areas, the last agricultural frontier on earth. By making use of past experience with the Japan-Brazil Cerrado development project, it aims to meet the growing demand for food due to the economic development of emerging countries, and contribute to Mozambican and world food security.

The program is beginning in the areas neighboring the Nacara Corridor in northern Mozambique. In Phase I, it aims to develop human resources and formulate an approximately five-year development plan by carefully joining the following elements: technical cooperation to improve agricultural research capacity, study to create a master plan for agricultural development, and technical cooperation to strengthen the capacity of agricultural extension and conduct agricultural demonstrations. The plan of Phase 2 is to implement agricultural development activities in the field andmonitor the project's progress and outcomes. One noteworthy aspect of the program, not very usual in triangular cooperation, is that it started promoting cooperation between the public and private sectors in Japan, Brazil, and Mozambique immediately after the program began. This element has been emphasized because without private sector participation through the principle of Responsible Agriculture Investiment (RAI), it would be impossible to achieve a development of the expected scale; Mozambique has a tropical savanna of 55 million hectares, approximately 15 times greater than Japan's cultivatable area.

3-2 A Japanese-Brazilian Adviser for Human Resource Development in Mozambique

Another project under JBPP is a case where a descendant of former Japanese immigrants to Brazil has had an important role to play. Dr. Lucy Ito (Medical Department of the University of São Paulo), a third-generation Japanese Brazilian, provided expert service to Mozambique's Ministry of Health as JICA's first long-term third-country expert in the world. Dr. Ito worked to establish the groundwork for the human resources development system and supported authorization of the first Mozambican-made textbooks and manuals[3], that were in a state of extreme short supply, for several technical training courses for health

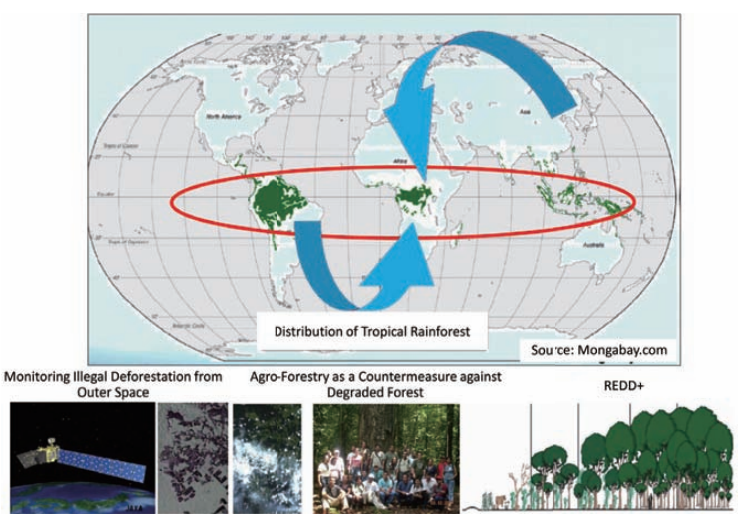
[3] Until then they were using learning materials developed in foreign countries, not necessarily fit to the Mozambican contexts.

professionals. The project in which Dr. Ito is working is a Japanese international cooperation program, where, along with her professional skills and knowledge, Dr. Ito can take advantage of her familiarity with cultures and traditions both of Japan and Brazil.

3-3 The Japan-Brazil Global Network for the Conservation of the Tropical Rainforest [4]

Bilateral cooperation between Japan and Brazil has also been contributing to the creation of a tropical rainforest conservation model. Amid the strong demand for Brazil's technology and experience by other countries in the world that posess tropical rainforests, Brazil, which has the largest tropical rainforest in the world, and Japan are now jointly providing technical assistance on the following three themes: "monitoring tropical rainforests from artificial satellites," "reducing emissions from deforestation and forest degradation in developing countries (REED+)," and "spreading agro-forestry as a countermeasure against forest degredation." Under these themes, the cooperation between Brazil and Japan is expanding on a global scale and is covering non-Portuguese-speaking African countries, such as those in the Congo Basin, and Southeast Asian countries, and it can be called the "Japan-Brazil Global Network to Save the Tropical Rainforests". A conceptual diagram and tangible examples of such cooperation are shown in Figure 3.

Figure 3: Vision of the Japan-Brazil Global Network to Save Tropical Rainforests



[4] For more details, see Case 9 of this volume.

3-4 Japan-Brazil Coordination and Cooperation to Improve Public Security in Central America

Since 2000, Japan has been implementing bilateral technical cooperation with the State of São Paulo, which has suffered an extremely large number of crimes compared to other parts of the world, by facilitating community police activities based on Koban (Japanese-style police station). This has contributed to a reduction of the murder rate of the state by 70% over 10 years. Based on this achievement, the Japanese and Brazilian governments have been developing human resources to improve public security in Central American countries[5] that are interested in the São Paulo model, and have maintained dialogues since 2005. Even some developed countries, especially European countries, have begun to take a strong interest in learning about the successful cases in São Paulo.

4. Points to Consider for Future Promotion

Though there has been steady progress in the activities, JBPP, in my personal view, has several challenges to face for its continued progress, such as the following:

✓ Strengthening the Dissemination of JBPP Activities

The experience coming out of JBPP activities may be worthy of being shared and made known more widely. Among the JBPP activities, the ProSAVANA program cited above has become one of the best-known triangular cooperation programs in the world; it has been taken up by the mass media on occasions such as G20 meetings, the High-Level Forums for South-South cooperation, and summit meetings. However, there are more cases with interesting and important achievements/experiences, and active and constant dissemination of information and experiences of such JBPP projects are in order.

✓ Looking at JBPP as an International Cooperation Instrument

When JBPP was being advanced, top priority was placed on the implementation of projects to achieve tangible and concrete results, and efforts for publicly disseminating such achievements of this framework to the international development community have at best been inadequate. However, as the JBPP has already achieved massive results that can be disseminated and is turning a new page in international cooperation, it would be worthwhile to look back at JBPP and clarify

[5] El Salvador, Costa Rica, Guatemala, and Honduras

what have been its advantages and disadvantages, and what will be its further possibilities. This kind of intellectual analysis could be done from various angles in cooperation with universities and research institutes.

✓ Development of Practical Implementation Structure

JBPP triangular cooperation projects are planned and implemented based on an equal and horizontal partnership among three countries, but the system and capacity of JBPP for effective implementation are still under development. From a practical point of view, the following two seem essential: 1) to create sufficient and very close communication among the persons in charge of the three countries; 2) to facilitate mutual understanding through periodic communication among high-level authorities.

Table: List of the JBPP Projects

	Beneficiary Country	Project Name	Brazilian Institute	Implementation Period(JFY)
Joint Cooperation Project (PCJ)				
1	Angola	Capacity Development for Josina Machel Hospital	USP, UNICAMP, HSC	2007-2009
2	Angola	Vocational Training Advisor	SENAI	2007
3	Madagascar	Improvement of Maternal, Neonatal and Child Health Service in Madagascar	HSF	2008-2009
4	Mozambique	Improving the Sanitation and Sustainable Water Distribution in Zambezia State	EMBRAPA	2008-2010
5	Mexico	Development of Tropical Fruit Culture and Promotion of Small Producers	EMBRAPA	2009-2011
6	Mozambique	Advisor for Personnel Training in Health	USP	2009-2011
7	Guatemala	Strenghtening of the Urban Planning Capacities	IPPUC	2010
8	Mozambique	Strengthening the Capacity of Agriculture Reseach Institute of Mozambique	EMBRAPA	2010-2015
9	Bolivia	Improvement of health service delivery at community level	NUSP/UFPE	2010
10	Paraguay	Strenghtening of Transparence and Capability Development of the Local Governments	IMAP	2009-2011
11	Angola	Strengthening the Health System through Human Resources Development in Josina Machel Hospital and the other medical facilities and revitalization of primary health care in Angola-PROFORSA	MS, FIOCRUZ, (UNICAMP)	2011-2014
12	Bolivia	Value-added Agriculture and Forestry for Improvement of the Livelihood of Small scale farmers in North of La Paz	CEPLAC, CAMTA	2011-2014
13	El Salvador	Supporting Community Police Activities	PMESP	2011-

Joint Seminar (SCJ)				
1	Central America	International Community Police Meeting (in São Paulo)	PMESP	2007
2	Mozambique	Seminar for TCTP ex-participants in Mozambique (in Maputo, Mozambique)	ABC	2008
3	Paraguay	Seminar for the Formation of Human Resources in Transports (in Assuncion, Paraguay)	CEFTRU	2009
4	Latin America and Caribbean	2nd International Seminar of Non Revenue Water Management (in São Paulo)	SABESP	2009
5	Central America	International Meeting of Community Police (in São Paulo)	PMESP	2009
6	NA	JBPP Promotion Meeting 2010 (in Brasilia)	ABC	2009
7	Mozambique	International symposium Brazil-Japan Joint Agricultural cooperation in Tropical Savannah of Mozambique-PROSAVANA JBM- (in Tokyo)	EMBRAPA, etc	2009
8	SADC	Seminar for the Promotion of the Understanding on the ISDB-T system of digital television through the Brazil-Japan collaboration (in Sao Paulo)	DCT/MRE, MC	2010
9	NA	Seminar for the 10 years of the JBPP and 25 years of Triangular Cooperation (in Brasilia)	ABC	2010
10	Latin America and Africa	International Conference on Humanized Child Birth (in Brasilia)	REHUNA	2010
11	Pan Amazon Countries	International Symposium on Agroforestry Systems (in Belem)	EMBRAPA	2010
12	Central America	International Meeting of Community Police (in São Paulo)	PMESP	2010
13	Mozambique	International Seminar on Investiment to Mozambican Agricultural Sector (in São Paulo)	MRE	2011
14	Central America	4th International High Level Meeting of Community Police (in São Paulo)	PMESP	2011
Third Country Training Programme (TCTP)				
1	Various	Electric Engineering and Microcomputer	SENAI	1985-1989
2		Rescue and Fire Fighting	Corpo de Bombeiro DF	1987-1991
3		Applied Electronic Circuit and International Training Course on Microcomputer	SENAI-MG	1990-1994
4		Ceramics Technology and International Training Course on Housing Technology and Planning	IPT	1992-1996
5		Geriatrics	PUCRS	1994-1998
6		Quality Control of the Measles Vaccine	FIOCRUZ	1993-1997
7		Water Pollution Control	CETESB	1994-1998
8		Protective Relaying for Electric Power Generation and Transmission Systems	CESP	1994-1998
9		Vegetable Crops Production	CNPH/EMBRAPA	1995-1999
10		Tropical Diseases	LIKA/UFPE	1996-2000
11		Forest Watershed Management	IEF-SP	1995-1999

12	Various	Factory Automation Systems	SENAI SP	1997-2001
13		Strengthening on the Most Advanced Gastroenterological Diagnosis Training Course	UNICAMP	1998-2002
14		Domestic Waste Water Treatment Techniques	SABESP	1999-2003
15		Study of Poisonous Animals, Diagnosis and Treatment of Accidents caused by Poisonous Animals and Production of Antivenoms	BUTANTAN	1999-2003
16		Urban Railway Transport System	TRENSURB	1999-2003
17		Geriatrics	PUCRS	2000-2004
18		Progress in Livestock Parasitosis Diagnosis	UFBA-EMV	2000-2004
19		Vegetable Crops Production	CNPH/EMBRAPA	2000-2004
20		Worker's Health	CESTEH/FIOCRUZ	2001-2005
21		The JBPP Joint Training Course for Tutors in Public Health	FIOCRUZ	2001-2005
22		Tropical Diseases	LIKA/UFPE	2001-2005
23		Productivity Integrated Management	IBPQ-PR	2001-2005
24		Manufacturing Automation Systems	SENAI	2003-2007
25		Domestic Wastewater Treatment Techniques	SABESP	2005-2009
26		Rescue and First Aid Techniques	Brigada Militar	2005-2009
27		Livestock Parasitosis Diagnosis (Prorogation)	EMV-UFBA	2005-2009
28		Development of Immunobiologicals to the Public Health	BUTANTAN	2006-2011
29		Opportunistic Infections in HIV/AIDS Patients	UNICAMP	2006-2010
30		Sustainable Vegetable Crops Production	CNPH/EMBRAPA	2006-2010
31		Tropical Diseases	LIKA/UFPE	2006-2010
32		Agroforestry Systems Technology	CPATU/EMBRAPA	2006-2010
33		Urban Railway Transport System	TRENSURB	2006-2010
34		Urban Management Practices	IPPUC	2006-2010
35		Cassava Production and Processing and Tropical Fruits Production	CNPMF/EMBRAPA	2007-2011
36		Health Promotion, Local Development and Healthy Municipalities	NUSP/UFPE	2009-2013
37		Tropical Forest Monitoring	INPE/IBAMA	2010-2013
38		Great Rivers Discharge Measurement Techniques	ANA	2010-2014
39		Humanized Maternal and Childcare	FAIS/HSF	2010-2014

40	Various	Best Practices in Non-Revenue Water Prevention and Control	SABESP	2010-2014
41		Tuberculosis Management	FIOCRUZ	2010-2014
42		Persistent Organic Pollutants of the Stockholm Convention	CETESB	2011-2014
43		Agroforestry Systems Technology	EMBRAPA Amazonia Oriental	2011-2015
44		Reduce Emissions from Deforestation and Forest Degradation	INPA	2011-2012
45		ISDB-T Method for Digital television	Ministerio of Communication	2011-2012
46		Sustainable Vegetable Production	Embrapa Vegetables	2011-2015
47		Cashew Fruit Cultivation: Production, Post-Harvest and Industrial Processing of Cashew's fruit and peduncle	EMBRAPA Agroindustry	2011-2015
48		Sustainable Urban Management Practices	IPPUC	2011-2015
49		Comunity Police Koban System	Military Police of Sao Paulo State	2011-2013
50		Strengthening of Monitoring Capabilities of Mercury in the Amazon Region according to the Minamata Convention	IEC	2012-2015
51		Strengthening of Capabilities for management of International Cooperation by LDCs	ABC	2012-2015

Case 9

Towards Sustainable Rainforest Conservation in the World: International Course on Rainforest Monitoring

Yukiko Aida and Chiaki Kobayashi

1. Introduction

Implemented in the framework of the Japan-Brazil Partnership Program, the International Course on Rainforest Monitoring aims to develop the capacity of satellite monitoring among countries with rainforests.

The main content of the course is based on the knowledge developed out of a bilateral technical cooperation project between Brazil and Japan "Utilization of ALOS Images to Support Protection of the Brazilian Amazon Forest and Combat against Illegal Deforestation." Through this prior cooperation, Brazil has accumulated knowledge and practices on rainforest satellite monitoring, which it shares with the world as a country with the world's largest rainforest and a leader in its conservation.

This paper gives a brief illustration of the process of Brazil's capacity development in Rainforest conservation and how the country has been sharing its knowledge and capabilities with other countries.

2. Tropical Deforestation around the World and Brazil: The Process towards the Formulation of International Program

At one time, rainforests covered 12% of the earth's land mass but have been rapidly disappearing or deteriorating since the beginning of the 20th century. According to the Global Forest Resources Assessment issued by the Food and Agriculture Organization (FAO), approximately 13 million hectares of forests disappeared annually between 2000 and 2010.[1]

[1] FAO (2010)

Brazil's forest area is 520 million hectares, where primary forested area is estimated to be approximately 490 million hectares with 360 million hectares in the Amazon region, making Brazil the country with the largest rainforests in the world. At the same time, Brazil is also the country suffering from the severest depletion of forests in the world.

Recognizing the challenge, the government has made extensive efforts for preventing excessive deforestation, focusing on taking countermeasures for prevention of illegal deforestation in the Amazon. Measures taken include strengthening regulatory enforcement and monitoring using the remote sensing by earth observation satellites, closer collaboration within the administration, and increasing the awareness of agricultural and livestock farmers on forest conservation.

One of the big turning points in the Brazilian environment policy was the incorporation of environmental issues into the new federal constitution formulated in 1988. In the following year, four administrative organizations concerning natural conservation in Brazil were consolidated into an executive agency, the Brazilian Institute of Environment and Renewable Natural Resources, IBAMA. Also, the Environment Agency was upgraded to the Ministry of the Environment in 1992 and the environmental crime law was introduced in 1998. In this way, environmental policy, standards and regulations on the environment were instituted one after another, which formed the basis of the country's present environment conservation system. It is worth noting that these environmental protection regulations included provisions regarding the promotion of international cooperation in the field of environmental conservation. It points to Brazil's determination in taking the leadership in environmental conservation in the world.

In 2003, the "Action Plan for Protection and Control of Deforestation in the Amazon, (PPCDAM)" was formulated as a major policy and action plan. It aimed to reduce the deforestation ratio in the Amazon by the partnership of federal organizations, state governments, citizens groups, and private sectors through implementing the following approaches: [2]

1) Maintenance of territory and lands
2) Monitoring and environment management
3) Sustainable production activities
4) Infrastructure improvement.

[2] MOFA(2010)

In order to implement the action plan, the Brazilian government decided to adopt the latest technologies of the advanced countries while modifying them to meet actual conditions. It also implemented trainings for enhancing capacities of domestic institutions involved in conservation.

The rainforest monitoring system utilizing remote sensing technology[3] by earth observation satellites is an extremely effective tool for creating a deforestation database. In Brazil, forest monitoring utilizing satellite images started in the 1970's for tackling illegal deforestation of the Amazon rainforest. The National Institute for Space Research, INPE, adopted this system in 1988. However, monitoring with this system was often impeded by heavy clouds during rainy seasons. To overcome this problem, in 2007, the Japan Aerospace Exploration Agency, JAXA, started providing Brazil with satellite images from the Japanese Advanced Land Observing Satellite, ALOS, called "*Daichi*"(a Japanese word meaning the earth). Brazil thus embarked on an attempt to introduce a rainforest monitoring and observation system from outer space to monitor rainforests from above the clouds.

Brazil had to build up technological capability to interpret the ALOS images which are different from the conventional satellite images Brazil had been using. Thus JICA started a technical cooperation project called "Utilization of ALOS Images to Support Protection of the Brazilian Amazon Forest and Combat against Illegal Deforestation" from June 2009 to June 2012 with the Brazilian Institute of Environment and Renewable Natural Resources, IBAMA, and the Brazilian Federal Police Department, DPF. From the Japanese side, the participating member organizations included the governmental and scientific institutions.

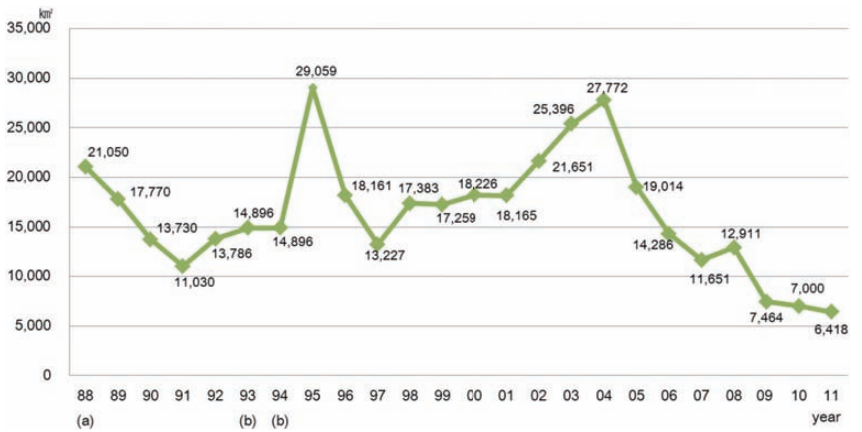
The aim of this project was to build a capacity and establish a system to utilize the images provided by the ALOS, to enforce conservation and management of rainforests in the Amazon. The monitoring systems established by the project have now become the Brazilian government's reference system of forest management, producing positive outcomes including the closer collaboration among public organizations concerned and enhanced the prompt enforcement of regulations. An expert involved in the project pointed out that in addition to enhanced

[3] Features of remote sensing technology:
http://www.eorc.jaxa.jp/en/hatoyama/experience/rm_kiso/whats_feature_e.html

monitoring capacities, it has brought unintended positive effects; i.e., it has, helped by the wide press coverage, enhanced the citizen's awareness that illegal deforestation is being monitored and that committing such crimes would not go unpunished.

Thanks to these Brazil's continuing efforts on environment conservation, the trend of deforestation has been slowed gradually in recent years. The annual national average of deforestation was 3.09 million hectares between 2000 and 2005. Between 2005 and 2010 it was down to 2.19 million hectares.[4] Figure 1 shows the result of Brazil's enhanced regulation against illegal deforestation in the Amazon. The figure indicates the annual loss of Amazon rainforest between 1988 and 2011, which was calculated and announced by INPE.[5] The trend has declined since 2004 and reached record lows since 2009.

Figure1: Annual Deforestation Rate in the Amazon



Source: The graph created based on the data of INPE/MCT
http://www.obt.inpe.br/prodes/prodes_1988_2011.htm
Note: (a) average between 1977-1988 (b) average between 1993-1994

[4] FAO (2010)

[5] The data includes both legal and illegal cutting areas.

Current research collaboration among Brazil and Japan

A project called "Carbon Dynamics of Amazonian Forests," was started in 2010, under the Science and Technology Research Partnership for Sustainable Development, SATREPS, as a bilateral cooperation between Brazil and Japan. Participating in the project are, from Japan: the Forestry and Forest Products Research Institute and the Institute of Industrial Science of the University of Tokyo, and from Brazil: INPE and the National Institute for Amazonian Research (INPA), a Brazilian research institution which is responsible for research of forestry and ecological science in the Amazon. The project aims to advance the development of carbon dynamics assessment technology for a wide range of forests under joint research by Brazil and Japan in order to contribute to the current discussion of Reducing Emissions from Deforestation and Forest Degradation, REDD.

3. Sharing Brazil's Rainforest Conservation Experience with Other Countries

In 2010, a new initiative started under a Japan-Brazil partnership, with Brazil's interest in expanding their accumulated experiences on forest conservation and environment management technologies, as well as Japan's interest in solving global issues. The International Course on Rainforest Monitoring (Third Country Training Program) started in that year with an aim of widely sharing the rainforest technology for monitoring illegal logging using satellites to other countries with rainforests. This course is offered through the partnership of four parties, the Brazilian Agency for Cooperation (ABC), INPE, IBAMA, and JICA. The implementation period was set between 2010 and 2013. Through this period, a total of 10 training sessions will be implemented accepting 120 or more personnel from 40 or more countries with dense rainforests.

In fact, Brazil has already built its high technological capability to be able to launch satellites. Over the last few decades, INPE has played a central role in transferring its technologies to other countries aiming to widely share their software which was used for the satellites. In partnership with Japan, Brazil has implemented 50 or more training courses for other developing countries since 1985. Among these courses, an example of triangular cooperation in the environmental conservation field is the

training program under the theme of watershed forest management. The program has been successfully implemented in two phases between 1990 and 1998. Through these activities, Brazil had accumulated abundant information not only on Latin American countries but also on African countries.

The International Course on Rainforest Monitoring is intended for a wide range of countries with dense rainforests threatened by serious deforestation risk including Southeast Asian countries. It had three specialized courses held annually per region: the first course is for Latin American countries such as Mexico and Peru, the second for African countries such as Mozambique and Angora, and the third for Southeast Asian countries. This extensive global coverage of beneficiary countries in this program has made the course a pioneering effort on dealing with issues on a global scale. In its implementation, Brazil partnered with Japan which has had many years of experience in collaborating with Asian countries.


Practice of using Terra Amazon system

The three-week training is mainly divided into two components covering theory and practice. The National Institute for Space Research, INPE, in charge of training related to forest monitoring using satellites, is an institution that provides experts for processing and making satellite images and transferring technology. With over 20 years' experience, it has advanced remote sensing technology. Training participants learn concepts of remote sensing and deepen their understanding of the Terra Amazon system, work on processing rainforest satellite monitoring images, and identify locations where rainforests have disappeared. Brazil offers the Terra Amazon system at no cost. The system is characterized by its high versatility due to its flexible specifications and it can be customized to fit the circumstances of each country. Although each country needs to prepare and install satellite images to be processed, image processing is implemented at no cost. This advantage has been well-received from participating countries. Also, participating countries have access to necessary


Trainees receiving lecture at IBAMA

technical support as JICA and INPE agreed to appoint technical support staff during the project implementation period until 2013.

IBAMA, which has over 30 years of experience in forest monitoring and has implemented training for environmental analysts, is in charge of how the provided image data is used for actual monitoring and regulation. They offer training, by using the Terra Amazon system, focused on enhancing image interpreting capacity which enables training the identification of the locations of deforested areas and improving the administration system, allowing the swift crackdown on illegal activities.

This whole package of training has been executed under the Japan-Brazil Partnership Programme (JBPP). The triangular partnership between Japan and Brazil has already started in 1985 mainly aiming to disseminate the fruits of the past Japan's cooperation with Brazil to other developing countries. Since the two countries reached an agreement on the Partnership Programme in 2000, the cooperation entered into the full-fledged execution phase implementing trilateral cooperation on an equal footing between the two countries. In 2010, Japan and Brazil agreed to focus on formulating the project aiming to tackle various global issues. As priority areas for partnership, "environment and climate change," "food security," "measures for health and infectious diseases," "strengthening good governance and public security," and "disaster prevention" were selected[6].

In the field of "environment and climate change," various training programs were offered in the form of triangular cooperation, including not only rainforest monitoring in the Amazon but also capacity development in project formation, implementation and monitoring on REDD plus in Latin American countries. With regard to sustainable development promotion, agro-forestry as an approach of combining rainforest conservation and small scaled sustainable agriculture also attracts attention as described as "agricultural methods leading to the

[6] Sakaguchi (2011)

creation of forests.".

4. Status of Follow-up Actions among Participating Countries: Indonesia as an Example

A country with significant economic growth, Indonesia is the 8th largest forest nation in the world. The land size of Indonesia is 180 million hectares, and forests account for about half, at 94.43 million hectares. Started in the 1970's, land diversion for lumber processing and agriculture has resulted in a large scale forest development, forest fires, and illegal logging causing serious deforestation. Between 1990 and 2000, the amount of forest decreased 1.91 million hectares annually which ranked Indonesia 2nd in the amount of forested areas impacted in the world, following Brazil. Although the speed has slowed down since 2000, the rate of deforestation in Indonesia is still the 3rd in the world. Under these circumstances, the Indonesian government is shifting policy from advancing forest development toward forest conservation including the elimination of illegal logging, forest fire prevention, and promoting sustainable forest management [7].

Meeting at the President's Office in Indonesia

Cooperation between Indonesia and Brazil progressed taking various steps. Prior to the implementation of the "International Course on Rainforest Monitoring" for countries in Southeast Asia, a Japan-Brazil joint missionwas dispatched to Indonesia in July 2011 for the purpose of conducting a needs assessment and planning a training course making use of Brazil's experience. From the discussion emerged a strong interest in the use of high-level remote sensing technology using microwave sensors, which makes observation of rain forests from above the clouds possible throughout the year. Indonesians who later participated in the training discovered that the Terra Amazon system that they learned during the training would work quite well in Indonesia. With its strong desire to exchange rainforest conservation technology at a policy level, Indonesia dispatched a team of high-level officials to Brazil. Their interests were not only in Brazilian monitoring technology but also Brazil's experience in the

[7] FAO(2010), Baser et al.(2011)

establishment of management systems. In addition to this training course, complementary technical cooperation using ALOS for controlling illegal logging was provided to Indonesia as the bilateral cooperation between Indonesia and Japan.

5. Review of the Past and the Future Perspectives

Efforts have been made to maximizing the training course's benefits. One challenge was to select appropriate participants to enable effective knowledge exchange. In order to recruit the appropriate participants from countries with diverse technological levels, training participants are carefully selected and the maximum number of participants per training set limited to 12 people. Also efforts have been made to customize the training programs to suit the needs of particular groups of participants.

The forest monitoring system was created through a trial and error process by Brazil, the world's largest rainforest country, and it has contributed to a reduction of the deforestation ratio. It offers a huge opportunity for countries with rainforests. In order to maximize the learning, several means of support have been made available after training such as the following:

1) A technical coordinator makes tours to the participating institutions.
2) Consultation related to the system is provided via e-mail or TV conferences.
3) Building a network between trainees is encouraged.

Discussion with support staff on diffusing the system after the training

There are challenges, however. First, program may wish to invite more decision makers from the policy-making level as well as technological experts. Second, in beneficiary countries, due to a shortage of engineers who are responsible for the operation and diffusion of knowledge acquired from training, there is a need for improvement in terms of facilitating participation and dissemination of learning after the training. JICA has a system of follow up support through which Brazilian experts

can be dispatched, for activities such as workshops with returning training participants. Taking full advantage of these and other mechanisms, it is essential for the beneficiary countries to spread the benefits of the training in their own countries.

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APPENDIX

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Appendix 1: Policy Statements of Japan on South-South and Triangular Cooperation

An excerpt from Japan's ODA Charter adopted on August 29, 2003.

> *"Japan will actively promote South-South cooperation in partnership with more advanced developing countries in Asia and other regions. Japan will also strengthen collaboration with regional cooperation frameworks, and will support region-wide cooperation that encompasses several countries."*

An excerpt from the Statement by Mr.Joe NAKANO, then Parliamentary Vice-Minister for Foreign Affairs of Japan at Plenary 2, at the Fourth High Level Forum on Aid Effectiveness at Busan, Korea, on November 30, 2011.

> *"Regarding the South-South cooperation, Japan has a long and profound record. We have signed agreements on partnership programs with 12 countries, Indonesia, the Philippines, Singapore, Thailand, Argentina, Brazil, Chile, Mexico, Egypt, Jordan, Morocco and Tunisia.*
>
> *Food Security is one of the most pressing global issues facing us. Let me introduce Japan-Brazil-Mozambique trilateral cooperation. Expanding our long-term bilateral cooperation, Japan and Brazil are now working together to provide agricultural assistance to Mozambique.*
>
> *Another example is Japan-Kenya cooperation on teacher training on mathematics and science education. Based on our bilateral cooperation, Kenya is now providing teacher training courses and technical assistance to other African countries with us.*
>
> *Japan's long history of foreign assistance has started in 1954, when it was still an aid recipient. That is why the South-South cooperation has profound significance for Japan. Japan continues to be one of the biggest contributors to triangular cooperation.*
>
> *We bear a common responsibility to build a better future. It is my sincere hope that all of us gathered here today will renew our commitments to strengthening international cooperation.*
>
> *I believe that our own experiences in Asian region can be applied to other regional context, which will lead to scaling up for the South-South Cooperation through win-win-win partnership by sharing respective development experiences."*

Appendix 2: Major Events in South-South and Triangular Cooperation

Year	Global			Japan/JICA
	Venue	Name of International Conference	Adopted Action Plan	
1950	Colombo, Sri Lanka		**Colombo Plan**	
1955	Bandung, Indonesia	**Asian-African Conference**		
1961	Belgrade	Conference of Non-Aligned Nations	Non-Aligned Movement (NAM)	
1964			Group of Seventy-Seven (G77)	
1974			UNDP, SU/TCDC	
1975				The First Triangular Training of JICA in Thailand
1978	Buenos Aires	United Nations	**Buenos Aires Plan of Action** on Technical Cooperation among Developing Countries	
1992	Rio de Janeiro	United Nations Conference on Environment and Development (Rio Earth Summit)		ODA Charter
1993	Tokyo	The Tokyo International Conference on African Development: TICAD	Tokyo Declaration	
1994				Japan-Singapore Partnership Programme (JSPP)
				Japan-Thailand Partnership Programme (JTPP)
1997				Japan-Singapore Partnership Programme for the 21st Century (JSPP21)
1998	Tokyo	TICAD II	Tokyo Agenda for Action	Japan-Egypt Triangular Technical Cooperation Programme for the Promotion of South–South Cooperation in Africa
1999				Japan-Tunisia Triangular Technical Cooperation Programme for the Promotion of South-South Cooperation in Africa
				Japan-Chile Partnership Programme (JCPP)
2000	Havana, Cuba	1st Summit for the South	Havana Programme of Action	The Japan-Brazil Partnership Programme (JBPP)
2001	N.Y.	56th UN General Assembly	State of South-South Cooperation (Report to Secretary General)	Partnership Programme for Joint Cooperation between Japan and Argentina (PPJA)
				Japan-Philippines Partnership Programme (JPPP)

Year	Global			Japan/JICA
	Venue	Name of International Conference	Adopted Action Plan	
2002	Johannes-burg	World Summit on Sustainable Development		The 1st Japan-ASEAN Regional Cooperation Meeting (JARCOM)
2003	Tokyo	TICAD III	TICAD Tenth Anniversary Declaration	**ODA Charter (Revised)**
				Japan-Morocco Triangular Technical Cooperation Programme for the Promotion of South-South Cooperation in Africa
	Marrakesh, Morocco	G77 High-level Conference on SSC		Japan-Mexico Partnership Programme (JMPP)
				Japan-Indonesia Partnership Programme (JIPP)
2004				Japan-Jordan Partnership Programme (JJPP)
2005	Paris	The 2nd High Level Forum on Aid Effectiveness	Paris Declaration on Aid Effectiveness	
2008	Accra	Third High-Level Forum on Aid Effectiveness	Accra Agenda for Action	
	Yokohama	TICAD IV		
	N.Y.	The Global South-South Development Expo (GSSD Expo) 2008 / High-level Directors-General Meeting		
2009	Nairobi	High-level U.N. Conference on South-South Cooperation	Nairobi outcome document of the High-level United Nations Conference on South-South Cooperation	Japan-Southeast Asian Meeting for South-South Cooperation (J-SEAM)
	Washington D.C.	GSSD Expo 2009 / High-level Directors-General Meeting		
2010	Bogota	The High Level Event on South-South Cooperation and Capacity Development	Bogota Statement	
	Geneva	GSSD Expo 2010 / High-level Directors-General Meeting		
2011	Busan	Fourth High Level Forum on Aid Effectiveness	Busan Partnership for Effective Development Co-operation	
	Rome	GSSD Expo 2011 / High-level Directors-General Meeting		
2012	N.Y.	UN High-level Committee on South-South Cooperation		
	Rio de Janeiro	The United Nations Conference on Sustainable Development (Rio+20)		
	Bali	High-Level Meeting, 'Towards Country-Led Knowledge Hubs'		
	Vienna	GSSD Expo 2012 / High-level Directors-General Meeting		

Appendix 3: List of Completed and Ongoing Triangular Programs/Projects (as of November 2012)

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
1	2003	2013	Africa	Kenya	Africa	Education and Human Resource Development	Strengthening of Mathematics and Science Education in Western/ Eastern/ Central and Southern Africa
2	2009	2013	Africa	Kenya	South-East Africa	Education and Human Resource Development	Seminar on Geographic Information Science
3	2012	2016	Africa	Kenya	Ethiopia	Education and Human Resource Development	Triangular Cooperation in Capacity Development of Mathematics and Science Teacher Educators
4	2009	2012	Africa	Malaysia	Zambia	Trade and Industry	Zambia Investment Promotion Project-Triangle of Hope(ZIPP-ToH)
5	2007	2012	Africa	Sri Lanka	Africa	Health	Better Hospital Services Program
6	2004	2014	Africa	West Africa Regional Network	West Africa	Education and Human Resource Development	School-Based Management in basic education (*Multiple projects)
7	2010	2012	Africa	West Africa Regional Network (Ghana)	West Africa	Agriculture/ Forestry and Fisheries	Plant Breeder (Rice) for West Africa Centre for Crop Improvement (WACCI)
8	2012	2015	South-East Asia	Cambodia/ Laos	Cambodia/ Lao PDR	Trade and Industry	Laos-Cambodia South-South Cooperation on UXO/Mine Action Sector
9	2004	2006	South-East Asia	Indonesia	Afghanistan	Agriculture/ Forestry and Fisheries	Third Country Training Program: Exchange Visit for Agricultural and Rural Development Officers from Afghanistan
10	2007	2011	South-East Asia	Indonesia	Africa	Public Sector Management	Micro Finance for African Region: Establishing Micro Finance Institution (MFI)
11	2007	2011	South-East Asia	Indonesia	Asia/ Africa	Education and Human Resource Development	Capacity Building for Poverty Reduction
12	2008	2011	South-East Asia	Indonesia	Asia/ Africa	Agriculture/ Forestry and Fisheries	Training of Trainers for Participatory Training Program on Agricultural Extension Methodology
13	2010	2013	South-East Asia	Indonesia	Asia/ Africa/ Palestine	Education and Human Resource Development	Education for Computer based Industrial Automation
14	2011	2016	South-East Asia	Indonesia	Asia / Africa	Telecommunication and ICT	The Third Country Training (The International Training Program on Documentary TV Program Production for Asian and African Countries)
15	2012	2013	South-East Asia	Indonesia	Indonesia (Global)	Public Sector Management	Project on Knowledge Management for South-South Cooperation

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
16	2006	2007	South-East Asia	Malaysia	Asia	Agriculture/ Forestry and Fisheries	Policy and Strategy in Prevention/ Control/ and Eradication Programme of Avian Influenza in Region at Source
17	2006	2009	South-East Asia	Malaysia	Asia	Agriculture/ Forestry and Fisheries	Diagnosis of Avian Influenza at Source
18	2007	2008	South-East Asia	Malaysia	Malaysia (Global)	Public Sector Management	Monitoring and Evaluation of Training Programmes under South-South Cooperation
19	2008	2011	South-East Asia	Malaysia	Africa	Education and Human Resource Development	TCTP Course for Secondary Mathematics and Science Teacher Educators from African Countries
20	2008	2011	South-East Asia	Malaysia	Afghanistan/ Iraq/ Sudan	Public Sector Management	Consolidation of Peace for Multicultural Nations
21	2009	2012	South-East Asia	Malaysia	Uzbekistan/ Kyrgyzstan/ Tajikistan	Public Sector Management	Project Planning & Management
22	2011	2014	South-East Asia	Malaysia	Africa	Education and Human Resource Development	Primary science and Mathematics Teacher Educators Training
23	2011	2013	South-East Asia	Malaysia	Africa	Trade and Industry	SME Development for trade promotion/TICAD IV follow up
24	2012	2015	South-East Asia	Malaysia	Cambodia/ Lao PDR	Public Sector Management	TCTP on Development Planning and Project Management for Cambodia and Laos
25	2012	2015	South-East Asia	Thailand	Myanmar	Education and Human Resource Development	Strengthening of Measurement Standard Institution
26	2008	2008	South-East Asia	Singapore	Global	Public Sector Management	Economic Development Experience of Singapore
27	2008	2008	South-East Asia	Singapore	Asia/ Africa/ Micronesia	Water	Non-conventional Water Resources and Environmental Management in Water Scarce Countries
28	2009	2009	South-East Asia	Singapore	Global	Public Sector Management	Economic Development Experience of Singapore
29	2009	2009	South-East Asia	Singapore	Global	Public Sector Management	Community Policing Strategies evolving from the Koban system of Japan and the NPC system of Singapore
30	2009	2009	South-East Asia	Singapore	Global	Public Sector Management	Public Policy Responses to Global Financial Crisis
31	2009	2009	South-East Asia	Singapore	Asia	Transport	Maritime Safety Management
32	2009	2009	South-East Asia	Singapore	Asia/ Africa/ Middle East/ Micronesia	Environment	Non-Conventional Water Resources and Environmental Management in Water Scarce Countries
33	2010	2011	South-East Asia	Singapore	South-East Asia	Public Sector Management	Capacity Building for ASEAN Secretariat
34	2010	2011	South-East Asia	Singapore	Global	Public Sector Management	International Disaster Management

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
35	2010	2011	South-East Asia	Singapore	Asia / Pacific	Health	Workshop on Multi-Sectoral Approach to Managing Pandemics for APEC Economies
36	2010	2011	South-East Asia	Singapore	Africa	Urban Development	Urban and Regional Development Planning and Management
37	2010	2011	South-East Asia	Singapore	Viet Nam	Public Sector Management	Public Governance for Vietnam
38	2010	2011	South-East Asia	Singapore	Global	Public Sector Management	Community Policing Strategies evolving from the Koban system of Japan and the NPC system of Singapore
39	2010	2011	South-East Asia	Singapore	Global	Public Sector Management	Economic Development Experience of Singapore and Japan
40	2010	2011	South-East Asia	Singapore	Cambodia/ Lao PDR/ Myanmar/ Viet Nam	Trade and Industry	Competition Law and Impact on FDI for CLMV
41	2010	2011	South-East Asia	Singapore	Cambodia	Trade and Industry	Conformity Assessment Needs and Approaches for Cambodia
42	2010	2011	South-East Asia	Singapore	Asia	Transport	Road Safety Engineering and Management
43	2010	2011	South-East Asia	Singapore	Asia / Pacific	Trade and Industry	Achieving Competitiveness in the Service Sector: Strategies and Lessons for APEC Economies
44	2010	2011	South-East Asia	Singapore	Asia/ Palestine	Environment	Climate Change and Energy Sustainability
45	2010	2011	South-East Asia	Singapore	Myanmar	Social Welfare	Occupational Health and Safety Management for Myanmar
46	2010	2011	South-East Asia	Singapore	Asia / Pacific	Trade and Industry	Trade and Investment Promotion for APEC Economies
47	2010	2011	South-East Asia	Singapore	Cambodia/ Lao PDR/ Myanmar / Viet Nam	Trade and Industry	Intellectual Property for CLMV
48	2010	2011	South-East Asia	Singapore	Africa	Public Sector Management	Governance for African Countries
49	2010	2011	South-East Asia	Singapore	Cambodia/ Lao PDR/ Myanmar / Viet Nam	Environment	Environmental Planning for Sustainable Tourism for CLMV
50	2010	2011	South-East Asia	Singapore	Asia	Transport	Maritime Safety Management
51	2010	2011	South-East Asia	Singapore	Asia/ Middle East/ Africa/ Micronesia	Water	Integrated water resources and environment management policy in water scarce regions
52	2011	2011	South-East Asia	Singapore	Asia/ Middle East/ Africa/ Micronesia	Water	Integrated Water Resources and Environment Management Policy in Water Scarce Regions
53	2011	2011	South-East Asia	Singapore	Africa	Public Sector Management	Governance for African Countries

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
54	2011	2011	South-East Asia	Singapore	Africa	Urban Development	Urban and Regional Development Planning and Management
55	2011	2011	South-East Asia	Singapore	Global	Public Sector Management	International Disaster Management
56	2011	2011	South-East Asia	Singapore	Cambodia/ Lao PDR/ Myanmar / Viet Nam	Environment	Environmental Planning for Sustainable Tourism for CLMV
57	2011	2011	South-East Asia	Singapore	Asia	Public Sector Management	Community Policing Strategies evolving from the Koban system of Japan and the NPC system of Singapore
58	2011	2011	South-East Asia	Singapore	Asia/ Palestine	Environment	Climate Change and Energy Sustainability
59	2011	2011	South-East Asia	Singapore	South-East Asia	Public Sector Management	Capacity Building for ASEAN Secretariat
60	2011	2011	South-East Asia	Singapore	Myanmar	Social Welfare	Occupational Health and Safety Management for Myanmar
61	2011	2012	South-East Asia	Singapore	Cambodia/ Lao PDR/ Myanmar/ Vietnam	Trade and Industry	Intellectual Property for CLMV
62	2011	2011	South-East Asia	Singapore	Asia	Transport	Maritime Safety Management
63	2007	2012	South-East Asia	South-East Asia Regional Network (Thailand)	Asia / Pacific	Social Welfare	Asia-Pacific Development Center on Disability (Phase 2)
64	2008	2011	South-East Asia	Thailand	Thailand (Global)	Transport	Capacity Building of Neighbouring Countries Economic Development Cooperation Agency (NEDA)
65	2008	2013	South-East Asia	Thailand	Asia / Pacific	Trade and Industry	The Program on Strengthening of Measurement Standards Institutes of Asia Pacific Countries
66	2008	2011	South-East Asia	Thailand	Africa	Health	International Training Course on STIs Case Management Skills
67	2010	2013	South-East Asia	Thailand	Africa	Health	International Training Course on Malaria Prevention and Control for Africa
68	2010	2012	South-East Asia	Thailand	Asia	Transport	Sustainable Road Development (Phase 2)
69	2010	2013	South-East Asia	Thailand	Cambodia/ Lao PDR	Social Welfare	Capacity Building on the Return/ Repatriation and Reintegration of Trafficked Persons in Cambodia/ Lao PDR/ Myanmar and Vietnam
70	2008	2016	South-East Asia	South-East Asia Regional Network (Thailand)	South-East Asia	Education and Human Resource Development	ASEAN University Network/ South-East Asia Engineering Education Development Network Phase 2
71	2005	2008	Central Asia	Bulgaria	Armenia	Trade and Industry	Human Resource Development of SMEs in Armenia
72	2002	2009	Middle East	Egypt	Zambia	Health	Clinical Immunology Laboratory Analysis Training for Zambia

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
73	2004	2007	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Warm Water Fish Production
74	2004	2007	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	On-Farm Water Management
75	2004	2009	Middle East	Egypt	Africa	Health	Clinical Immunology on Infectious Diseases& Total Quality Management
76	2005	2008	Middle East	Egypt	Yemen	Transport	Repair and Maintenance of Road Construction machines Machines for the Arab Republic of Yemen
77	2006	2008	Middle East	Egypt	Iraq	Health	Trilateral Medical Technical Cooperation for Iraq in Egypt
78	2007	2007	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Rice Processing Technology for Africa
79	2007	2010	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Food Processing Industry (FPI) for Africa
80	2007	2010	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Warm Water Fish Production for Africa Phase2
81	2009	2012	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Rice Cultivation Techniques for Africa
82	2009	2012	Middle East	Egypt	Africa	Health	International Course for Clinical Immunology for Africa
83	2010	2013	Middle East	Egypt	Africa	Health	Woman's Health across Life Span for African Nurse Leaders Phase2
84	2010	2013	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Warm Water Fish Production for Africa Phase3
85	2010	2013	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	On Farm Water Management; Irrigation and Drainage for Africa Phase3
86	2010	2012	Middle East	Egypt	Africa	Health	Total Quality Management for Health Care Facilities for Africa
87	2010	2013	Middle East	Egypt	Palestine	Health	Total Quality Management for Health Care Facilities for Palestinians
88	2011	2014	Middle East	Egypt	Africa	Health	Quality Management of Concurrent Infections Control of TB and HIV for Africa Phase2
89	2011	2014	Middle East	Egypt	Africa	Trade and Industry	Export Marketing Techniques and Export Plan
90	2011	2014	Middle East	Egypt	Global	Health	Health Economics: Principles/ Methodologies/ Evaluation and Decision Making in Developing Countries
91	2011	2014	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Food Processing Industry Phase 2
92	2011	2014	Middle East	Egypt	Middle East	Trade and Industry	Tourism Development in Middle East Countries
93	2012	2015	Middle East	Egypt	Africa	Agriculture/ Forestry and Fisheries	Rice Cultivation Techniques for Africa phase 2

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
94	2012	2015	Middle East	Egypt	Africa	Energy	Electricity For African Countries
95	2012	2015	Middle East	Egypt	Africa	Health	Infectious diseases: clinical and laboratory diagnosis
96	2012	2015	Middle East	Egypt	Arab	Trade and Industry	Export Marketing Techniques & Export Plan for the Arab Countries
97	2009	2012	Middle East	Iran	Afghanistan	Education and Human Resource Development	Third country training program for Afghanistan on Management of Basic Vocational Training
98	2010	2012	Middle East	Iran	Afghanistan	Public Sector Management	3rd Country Training for Afghanistan / Custom
99	2012	2015	Middle East	Iran	Afghanistan	Education and Human Resource Development	Project for Third Country Training Program on Management of Basic Vocational Training for Afghanistan phase 2
100	2009	2012	Middle East	Jordan	Palestine	Agriculture/ Forestry and Fisheries	Capacity Development for Agricultural Research and Development in the Palestinian National Authority
101	2009	2013	Middle East	Jordan	Yemen	Agriculture/ Forestry and Fisheries	Efficient use of water for irrigation in Yemen
102	2009	2012	Middle East	Jordan	Palestine	Water	Water Resource Management for Palestinians -Phase 2-
103	2009	2013	Middle East	Jordan	Yemen	Water	Capacity Building in Water Sector Management- Non Revenue Water- in Yemen
104	2009	2012	Middle East	Jordan	Palestine	Trade and Industry	Capacity Development on Food Control and Food Laboratory Analysis for Food Inspectors and Food Laboratory Technicians in Palestine
105	2009	2012	Middle East	Jordan	Palestine	Environment	Capacity Development in Meteorology for Palestine
106	2012	2015	Middle East	Morocco	West Africa	Agriculture/ Forestry and Fisheries	Promotion of Artisanal Fisheries Phase3
107	2012	2015	Middle East	Morocco	West Africa	Transport	Road Maintenance and Construction Equipment (Phase 4)
108	2012	2015	Middle East	Morocco	West Africa	Transport	Exploitation and Management
109	2009	2013	Middle East	Tunisia	Yemen	Agriculture/ Forestry and Fisheries	Capacity Building of Fishery Vocational Training for Yemen
110	2011	2012	Middle East	Tunisia	Tunisia (Global)	Public Sector Management	Enhancement of South-South Cooperation
111	2011	2014	Middle East	Tunisia	Francophone Africa	Trade and Industry	Strengthening Tourism Sector in French-speaking African Countries
112	2012	2015	Middle East	Turkey	Central Asia/ Middle East	Education and Human Resource Development	Industrial Automation Technology(IAT) Extension Project for Central Asian/Middle East Countries

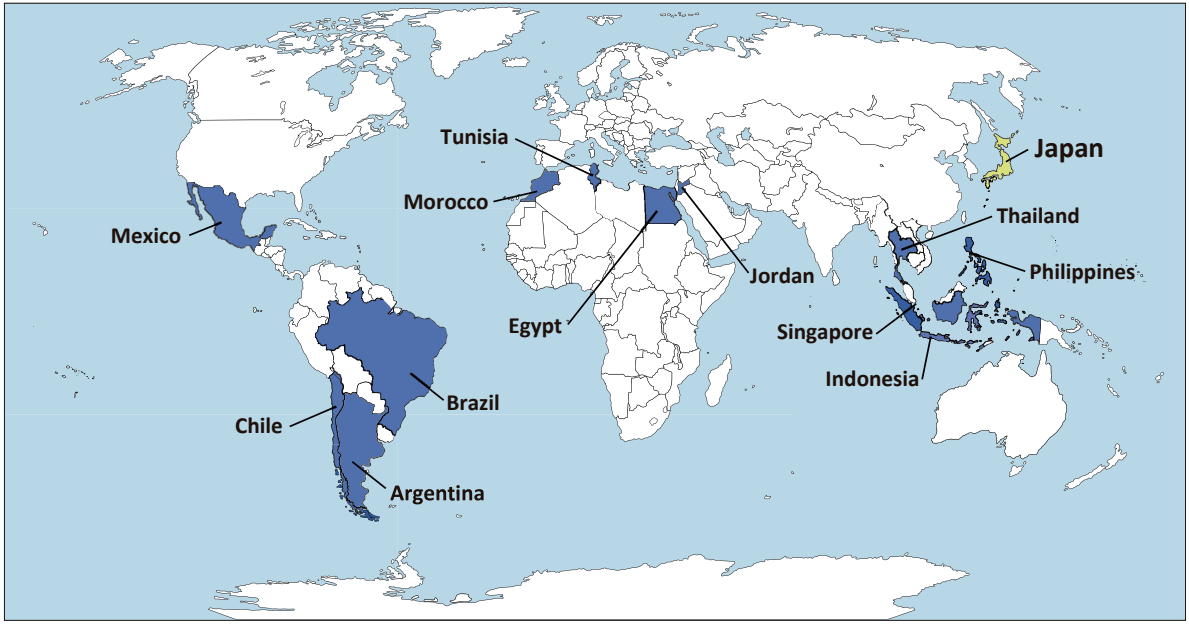
	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
113	2005	2012	Latin America	Argentina	South America	Agriculture/ Forestry and Fisheries	The Project of the Capacity Development for Improvement of Livestock Hygiene in the Southern Part of South America through Regional Technical Cooperation
114	2005	2010	Latin America	Argentina	Latin America	Environment	Evaluation and Control of the Environmental Contamination
115	2005	2007	Latin America	Argentina	Latin America	Public Sector Management	The Enhancement of Capacity in PCM Method Project
116	2006	2011	Latin America	Argentina	Latin America	Public Works/ Utilities-Social Infrastructure-Measurement/Map	Training on Remote Sensing using ASTER data
117	2011	2014	Latin America	Argentina	South America	Agriculture/ Forestry and Fisheries	Prevention and Zoonosis Control of South American region
118	2011	2014	Latin America	Argentina	Latin America/ Africa	Trade and Industry	Training for Application of management technologies in SMEs
120	2008	2010	Latin America	Brazil	Paraguay	Environment	Project for the Support to the Decentralization of the Environmental Administration
121	2010	2014	Latin America	Brazil	Latin America/ Africa/ Asia	Agriculture/ Forestry and Fisheries	International Course on Rainforest Monitoring
122	2010	2015	Latin America	Brazil	Latin America	Water	International Course for Great Rivers Discharge Measurement Techniques
123	2010	2015	Latin America	Brazil	Madagascar/ Cambodia	Health	Training Course on Humanized Care for Mother and Newborn
124	2010	2015	Latin America	Brazil	Latin America/ Africa	Water	International Course on Best Practices in Non revenue water prevention and control
125	2010	2015	Latin America	Brazil	Lusophone Africa	Health	Training Course on Tuberculosis Managing for PALOPSs
126	2011	2016	Latin America	Brazil	Mozambique	Education and Human Resource Development	Project for improving research capacity for Nacala Corridor agriculture development
127	2007	2012	Latin America	Central American and Caribbean Regional Network	Latin America	Disaster Prevention	Project on Capacity Development for Disaster Risk Management in Central America "BOSAI"
128	2002	Ongoing	Latin America	Central American Regional Network	Latin America	Health	Capacity Development for vector control of Chagas Diseases
129	2003	2006	Latin America	Chile	Chile	Public Sector Management	Strengthening Japan-Chile Partnership Programme(JCPP)
130	2003	2008	Latin America	Chile	Latin America	Agriculture/ Forestry and Fisheries	Mollusk Aquaculture

	Started in	Completed in	Region (Pivotal)	Pivotal	Beneficiaries	Sector	Program and Project Title
131	2004	2009	Latin America	Chile	Latin America	Public Sector Management	International Training course on Environmental Restoration for sustainable management of Degraded soil and Watersheds
132	2006	2011	Latin America	Chile	Latin America	Agriculture/ Forestry and Fisheries	Third Country Training Programme for Sustainable Bovine Production on Small and Medium Agriculture
133	2006	2011	Latin America	Chile	Latin America	Social Welfare	International Course on the Attention System of Rehabilitation for Disabled People
134	2009	2012	Latin America	Chile	Paraguay	Health	JCPP Project on Strengthening of Early Intervention Program for Disabled Children in Paraguay
135	2009	2012	Latin America	Chile	Colombia	Agriculture/ Forestry and Fisheries	JCPP project on shellfish aquaculture development in Colombia
136	2010	2013	Latin America	Chile	Bolivia	Social Welfare	JCPP Project on Strengthening of Policy Implementation for Person with Disability in Bolivia
137	2009	2012	Latin America	Costa Rica	Latin America	Trade and Industry	Project for Capacity Building of Facilitators on Improving Productivity and Quality for Small and Medium Enterprise in Central America and Caribbean Region
138	2010	2013	Latin America	Dominican Republic	Haiti	Agriculture/ Forestry and Fisheries	Project PROAMO Technical Training to Technicians in Agricultural Production System in Mountainous Areas in the Republic of Haiti
139	2010	2011	Latin America	Guatemala	Guatemala	Urban Development	The Project on Urban Planning Capacity Development in Guatemala City
140	2003	2008	Latin America	Mexico	El Salvador	Disaster Prevention	Project TAISHIN "Enhancement of Technology for the Construction of Popular Earthquake Resistant Housing"
141	2008	2012	Latin America	Mexico	Latin America	Environment	Connectivity and management of protected areas in the Mesoamerica biological corridor
142	2011	2015	Latin America	Mexico	Latin America	Trade and Industry	Non-Destructing Test for the preparation to the certification

Appendix 4:

Partnership Programs

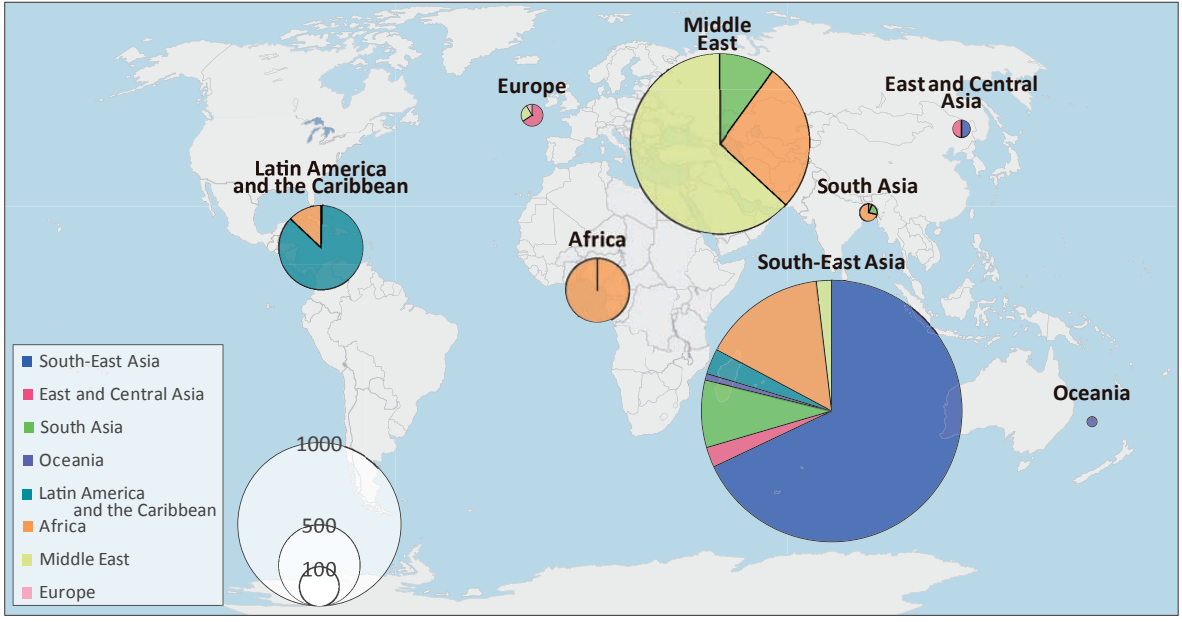
Countries in Partnership Programs with Japan



Appendix 5:

Opportunities for South-South Knowledge Exchange

Magnitude of Triangular Training Programs Supported by Japan by Region
&
The Composition of Participants (Japanese Fiscal Year 2010)

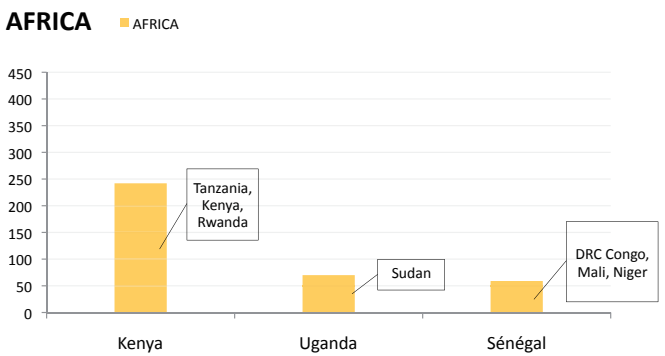


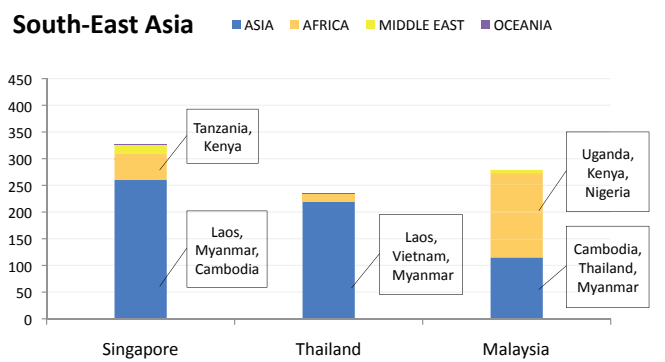
Notes:
-The size of the pie charts indicates the magnitude of knowledge exchange opportunities offered by the countries in the region (with support from Japan).
-The segments in the pie charts indicate the regions where the exchange-program participants come from.

Appendix 6:

Opportunities for South-South Knowledge Exchange

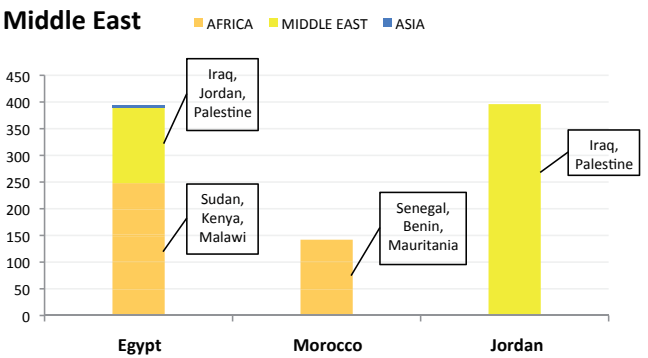
Magnitude of Triangular Training Programs supported by Japan by Country
&
The Composition of Participating Countries
(Top 3 countries-Japanese Fiscal Year 2011)

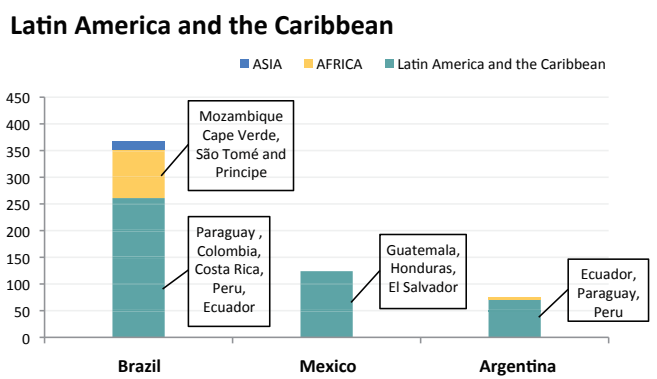




Notes:
The height of the bar charts indicates the magnitude of knowledge exchange opportunities offered by the top 3 countries in the region (with support from Japan). The segments in the bar charts indicate the countries where the exchange-program participants come from. The name of countries in boxes above denotes the main recipients of training programs provided by each pivotal country.

Appendix 6 (continued)
Opportunities for South-South Knowledge Exchange
Magnitude of Triangular Training Programs supported by Japan by Country
&
The Composition of Participating Countries
(Top 3 countries)





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ISBN:978-4-86357-046-7