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Chains of Knowledge Creation and Emerging Donors

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Chains of Knowledge Creation and Emerging Donors

Yasutami Shimomura* and Wang Ping†

Abstract

The objective is to cast new light on the possible contribution of ‘emerging donors,’ highlighting their ‘knowledge creation’ based on the experience of receiving aid. The process of knowledge creation is examined through a model composed of three hypotheses. A knowledge is created through the interaction between ‘local knowledge’ and ‘foreign (donor’s) knowledge.’ A new knowledge also evolves through the interaction between explicit and tacit knowledge. The created knowledge plays a vital role in the aid giving of emerging donors. Contrary to the mainstream idea of technical cooperation as a ‘one-way transfer’ of the best practices, the above model emphasizes the ‘two-way interaction’ between donors and recipients.

To check how the proposed model can explain the reality of emerging donors’ activities, three in-depth case studies are presented. First, China nurtured their pragmatic model of economic cooperation through the interaction between its own idea of ‘Da Jingmao’ and Japan’s idea of ‘Trinity Development Cooperation’, which the Chinese policy-makers found effective based on the evaluation of Japan’s aid. Nowadays, China extensively applies the created knowledge to the engagement with other developing countries, in particular Sub-Saharan Africa. Second, Thailand achieved the gigantic Eastern Seaboard Development Plan (ESDP) based on their tacit knowledge of ‘checks and balances a la Thai’ and Japanese explicit knowledge of coastal industrial complex construction. The evolution of the local/tacit knowledge was triggered by the strained donor-recipient relationship with the World Bank who criticized the largescale investment. Today, the Thai leaders are keen to assist Myanmar in utilizing the experience of the ESDP. Third, the chains of knowledge creation are identified by linking Japan’s learning of the model of the TVA (the Tennessee Valley Authority), their application to the Aichi Canal under the World Bank loan, Japan’s assistance to the Brantas River Basin Development Plan in the central Java, and the evolution of the Indonesian concept of ‘One River, One Plan, One Management’, which was adopted as the basic philosophy of an Asian regional institute of water resources management. Throughout the link, a basic element is shared: the pursuit of ‘integration.’

The results of testing the plausibility of the hypothetical model show that the four East Asian aid recipients created new knowledge of their own through the interaction with the donors; the next step is to test the cases of other regions. The emerging donors could contribute to the global development agenda by utilizing their newly created knowledge.

Keywords: knowledge creation, interaction, local knowledge, tacit knowledge, emerging donor

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1. Objective and the analytical framework

1.1 Objective of this paper

So-called ‘emerging donors’¹ attract worldwide attention, as they rapidly expand their activities and make considerable changes in developing countries, as well as to the international aid community, which has been dominated for long time by the nexus of Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) and the World Bank. While expressing concern about different aid philosophies and modes of providing aid, the mainstream arguments began to look at the fact that emerging donors could offer additional sources of funds and different approaches to development and poverty reduction. Taking into account the recent trend, this working paper attempts to cast new light on the possible contributions of emerging donors based on their ‘knowledge creation’ during aid receiving. It also attempts to illustrate the sources of donor diversity as opposed to the DAC’s mainstream approach of pursuing a ‘universal model.’

One notable difference between traditional and emerging donors, is their experience of receiving aid. Sharing the experiences of receiving aid with other developing countries could be a source of strength as traditional donors essentially lack this source of influence. In this context, Japan is exceptional among the traditional DAC member countries, as it received aid for a much longer period than the Western donors did. While major European donors, such as the UK, Germany, France, and Italy, received the Marshall Plan for four years between 1948-51, Japan received external assistance for nearly 20 years, in the form of U.S. assistance programs of relief and rehabilitation titled GARIOA (Government and Relief in Occupied Areas) and EROA (Economic Rehabilitation in Occupied Areas) between 1946 and 1951 (Ministry of Finance

¹ The so-called ‘emerging donor’ is a notion having various meaning. The notion is rather elusive as it is composed of different members from one argument to another. Usually, it means ‘non-DAC donors,’ such as the BRICs countries and Arab donors. The description of ‘emerging’ is not appropriate, however, as most of emerging donors have a long history of aid giving. For example, China started its aid in 1950, and the origin of India’s aid giving lies in the late 1940s.

1983: 918, 927); Japan also received World Bank loans between 1953 and 1965 (Nakayama and Fujikura 2013, 49). As a matter of fact, Japan was the second largest borrower of the World Bank in the early 1960s, only second to India. In the meantime, Japan started its own aid programs. Japan's participation in the Colombo Plan (1954) was the gateway into technical cooperation. Treaties of economic cooperation composed of grants and loans were signed with the governments of Burma, Philippines, Indonesia, and South Vietnam between 1955 and 1959, in parallel with the reparation treaties with these four countries (Ministry of Finance 1984, 479-516). In those days, Japan was a new donor as well as a major recipient. Therefore, Japan shares, to a certain degree, an essential feature with emerging donors.

One basic question that arises is: "how does recipient experience count?" (Sato 2013,1). The objective of our paper is to address the relationship between aid receiving and giving, highlighting the fact that aid recipients have created knowledge during the time they receive aid. The created knowledge could play an important role when emerging donors start their own aid programs and could be a unique contribution to development and poverty reduction. This paper proposes a hypothetical model in which the 'knowledge creation' (as we will refer to it) by emerging donors, during the time they receive aid, is at the center.

1.2 Analytical Framework

Let us start by examining the notion of 'knowledge creation.' The traditional concept of knowledge is an 'explicit knowledge' that "can be clearly stated" (Polanyi 2009, 22). More specifically, explicit knowledge "can be expressed in words and numbers, and easily communicated and shared in the form of data, scientific formulas, or coded procedures" (Takeuchi 2006, 4). Explicit knowledge can be transmitted easily and systematically. As Michael Polanyi pointed out, however, there is another type of knowledge i.e., 'tacit knowledge.' Polanyi stressed that "we can know more than we can tell" and there is a knowledge which "cannot be put into words" (Polanyi 2009, 4-5). A typical example of tacit knowledge is the medical

doctor's capacity to identify diseases through the careful observation of a patient's appearance. This paper regards knowledge as the composition of explicit and tacit knowledge.

According to Ikujiro Nonaka, new knowledge is created through "the continuous conversion of tacit knowledge and explicit knowledge" (Nonaka and Konno 2003, 56-57; Nonaka 2006, 13-14). Taking into consideration Nonaka's way of thinking, this paper examines the process of knowledge creation by the aid recipient based on the following three hypotheses: First, knowledge is created as the result of the interaction between a 'local knowledge' and a 'foreign (or donor) knowledge,' which is absorbed by the aid recipient during aid implementation (Figure 1); a new type of knowledge is expected to evolve through the interaction between local and foreign knowledge. It is neither a simple learning process nor a one-way knowledge transfer from a donor to the recipient, contrary to the standard idea of technical cooperation. Second, a new knowledge evolves through the interaction between explicit and tacit knowledge (Figure 1).

A donor's knowledge is assumed to be largely explicit, as it is communicated with various written documents such as plans, directories, and manuals, although we do not exclude cases where a donor's tacit knowledge, which is based on the practical experiences of aid experts, play important roles. On the other hand, tacit knowledge is assumed to be the overwhelming factor in local knowledge, as a substantial part of local knowledge is not yet expressed in formal ways. Third, the 'created knowledge,' which is the output of interaction between local and foreign knowledge, often plays a vital role in aid giving activities of emerging donors (Figure 2).

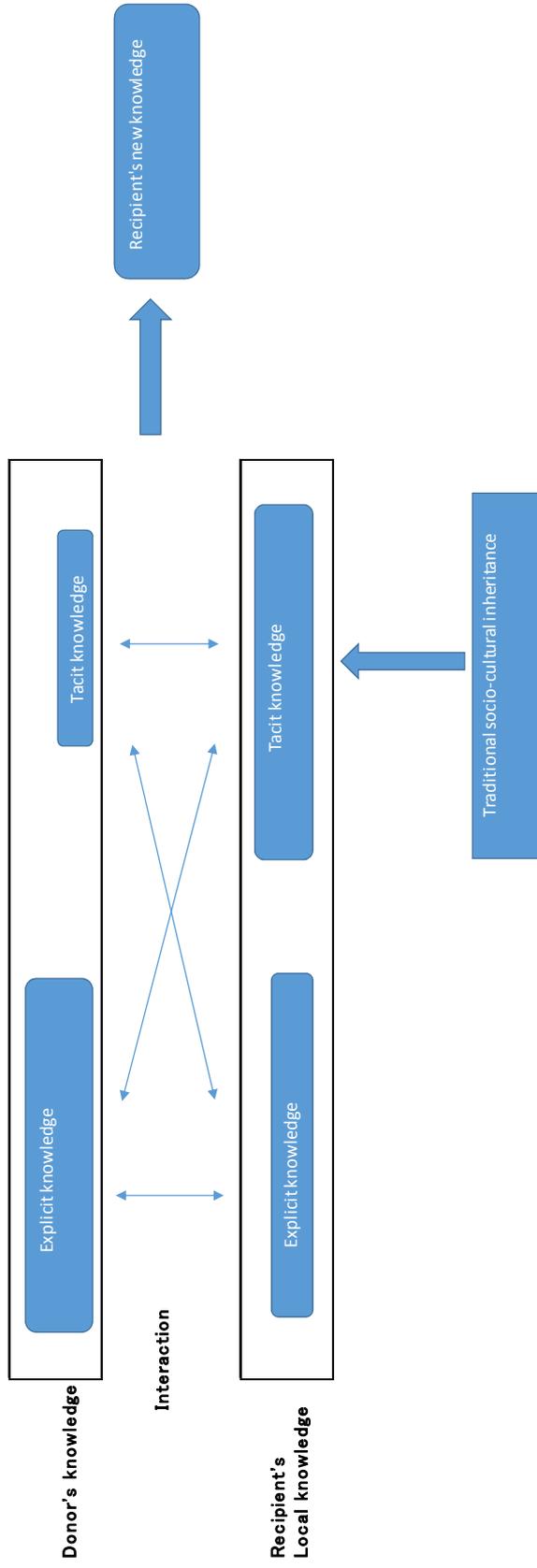


Figure 1. The process of recipient's knowledge creation

Source: Prepared by authors

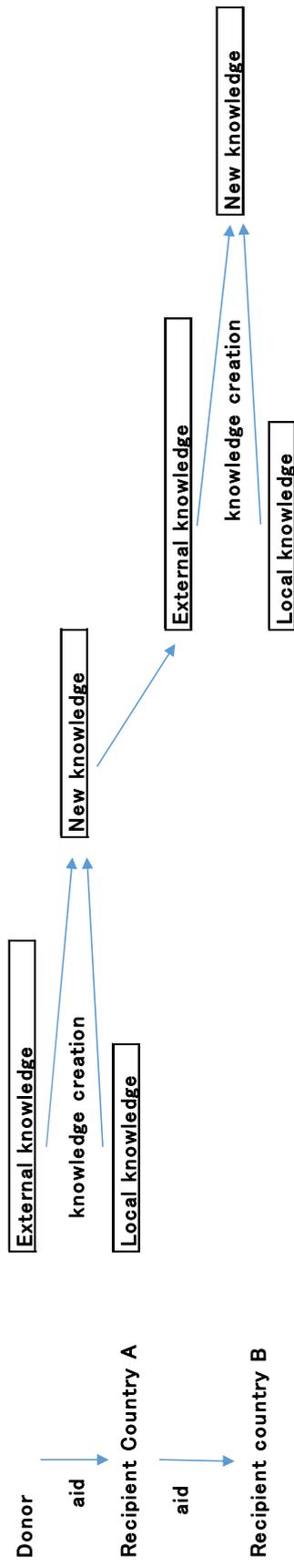


Figure 2. Chain of knowledge creation

Source: Prepared by authors

In this regard, it is important to notice that local knowledge is embedded and deep-rooted in the recipient's traditional socio-economic inheritance and differs from one society to another. This leads to the diversity of new donors, as the features of a new donor's aid giving reflects their local knowledge. Moreover, as is shown in Figure 2, a 'chain of knowledge creation' could occur among aid recipients through the donor-recipient interface. More specifically, Country A creates its knowledge during the aid receiving period and utilizes, as an emerging donor, the accumulated knowledge in its own aid programs in relation to Country B. This process could be reproduced by Country B. The final assumption is that the basic characteristics of the creation and transfer of new knowledge by the recipient countries are determined by the specific local actors; their roles and features are different from one country to another. Again, it is important to recognize the diversity of emerging donors.

The notion of 'chains of knowledge creation' is different from the mainstream idea of knowledge diffusion. One of the roles of aid, in the view of the international aid community, is to increase the recipient's human capital through technical cooperation and aid-funded investment. DAC defines technical cooperation² as "[a]ctivities financed by a donor country whose primary purpose is to augment the level of knowledge, skills, technical know-how, or productive aptitudes of the population of developing countries" (Arndt 2000, 158). While technical cooperation usually assumes a 'one-way transfer' of the 'best practice' found in donor countries or the international aid community, the view seems to fail to take account of a recipient's ownership. On the contrary, our paper emphasizes, as already mentioned above, the 'two-way interaction' between donors and recipients in the process of knowledge creation. Moreover, it should be stressed that most of existing studies of investment-related technical transfer focus on the comparison between the initial conditions and the outcomes, and, accordingly, regard what

² The OECD has a separate and distinct definition for technical cooperation and technical assistance; the latter is related to project investment. However, other organizations including the World Bank use the two notions interchangeably (Arndt 2000, 158-159).

happens in between as a kind of ‘black box’ (Jerve and Nissanke 2008, 45-46). This paper highlights the dynamic mechanism of the intermediate process, with particular reference to ‘knowledge creation.’ The purpose of the paper is to provide an analysis of the intermediate process so as to depart from the black box.

1.3 Testing the plausibility of the proposed hypothetical model

The next task of this paper is to check how the abovementioned hypothetical model of knowledge creation/transfer can explain the reality of emerging donors’ activities. For this purpose, we present a set of in-depth case studies. The three adopted cases are from four Asian countries: one traditional donor (Japan); two emerging donors (China and Thailand); and one emerging donor-to-be (Indonesia). The aim of testing using in-depth case studies is to show that the model is plausible enough, as far as the East Asian donors are concerned. The first case deals with the evolution of the notion of ‘Trinity Development Cooperation’ in China as the essence of China’s own aid approach. The second case examines Thailand’s utilization of their knowledge of coastal industrial complex construction in their engagement with Myanmar. The third case analyzes the chain of knowledge creation connecting, directly or indirectly, TVA (Tennessee Valley Authority), Japan’s Aichi Canal under the World Bank’s loan, Indonesia’s Brantas River Basin Development Plan under Japanese aid, and Indonesia’s intellectual contribution to a newly established regional organization - the Integrated Water Resource Management (“IWRM”).

2. Case studies

2.1 Case A: The evolution of ‘Trinity Development Cooperation’ in China

2.1.1 China’s ‘Grand Aid’ and its two origins

China has emerged as a major donor. According to Kitano and Harada (2014), the size of China’s ‘foreign aid,’ in terms of net disbursement after adjusting the differences between China’s foreign aid and the OECD-DAC’s ODA, was ranked 6th in the world in 2013, just behind France and Japan. In terms of bilateral gross disbursement, it was forecast that China would catch up with Japan, +the second largest donor in this term³, before 2015 (Kobayashi and Shimomura 2013, 47-52). The salient feature of China’s foreign aid is its persistent pursuit of close linkage between aid, direct investment, and trade, in their engagement with developing countries. The importance of this mode of development cooperation has been repeatedly stressed by Chinese officials and researchers. A typical example is the remark made by Liu Xiangdong, Deputy Minister of the Ministry of Foreign Trade and Economic Cooperation, who argued that the synthesis of aid, direct investment, and trade can play an important role in the economic development of both the recipient countries and China (Liu 2001). Based on a series of arguments along this line, Zhou Baogen, an economist at the Research Institute for Fiscal Science, launched the idea of ‘*Da Yuanzhu* (Grand Aid)’ or concerted promotion of aid, trade, and investment, in which aid works as a catalyst to facilitate investment and trade (Zhou 2010a; Wang 2013, 126-127). Such a characteristic of China’s foreign aid, or economic cooperation in Chinese terms, began to attract the attention of the international aid community. A recent OECD working paper pointed out that in ‘the Chinese model’ “aid is only one element of a broader engagement toolbox aiming at laying the ground for enhanced bilateral trade and private sector activity” (Saidi and Wolf 2011).

³ In terms of bilateral net disbursement, Japan is the fifth largest donor. The significant gap between gross and net disbursement comes from its large amount of repayment inflow.

In our opinion, the so-called ‘Chinese model’ of foreign aid or economic cooperation has emanated from two different ways of thinking, local and foreign. The local one is called ‘Da Jingmao (The Broad–Based Strategy of Foreign Trade and Economic Cooperation).’ It appeared in China in the early 1990s. The other is the ‘New AID Plan (New Asian Industries Development Plan),’ which was launched by Japan’s Ministry of International Trade and Industry in 1987. In our view, the so-called ‘Chinese model’, like Zhou Baogen’s ‘Da Yuanzhu’, was formulated combining these local and external policy strands. The purpose of the following sections is to illustrate how the Chinese way of thinking about aid policy has evolved.

2.1.2 China’s Broad–Based Strategy of Foreign Trade and Economic Cooperation

In 1992, Wu Yi, Minister of the Ministry of Foreign Trade and Economic Cooperation, proposed the notion of ‘Da Jingmao’ (The Broad–Based Strategy of Foreign Trade and Economic Cooperation),’ stressing the integration of various economic cooperation instruments including aid, direct investment, and trade. Wu officially launched ‘Da Jingmao’ in 1994, at the “International Symposium on ‘China’s Foreign Trade Strategy in the 1990s’.” The symposium was attended by Deputy Prime Minister Li Lanqing and Henry Kissinger. ‘Da Jingmao’ was authorized as a state strategy of China’s foreign trade.

Our literature review shows that the Strategy had been deeply rooted in the policy debates among the Chinese technocrats in the 1980s. The existence of such debates is evidenced by an article by Ji Chongwei, who was a high-ranking official in the Research Center of Economic, Technological, and Social Development, a think-tank under the State Council. Ji was an eminent planner of outward-oriented trade policy. In his article of 1988, which dealt with the path to an outward-oriented economy, Ji urged further integration between economic cooperation from abroad and China’s own external engagement. In this context, Ji expressed his ‘support’ for the idea of synthesizing trade, investment, and economic/technical cooperation (Ji 1988). His article implies that the original idea of ‘Da Jingmao’ had already been discussed by

his fellow technocrats in pursuit of effective measures for achieving the goal of ‘reform and opening-up.’ To put it differently, such an idea had already been shared in the late-1980s, by the reform-oriented technocrats whose central policy agenda was how to promote Chinese exports. To attain the goal of ‘Da Jingmao’, the Chinese government accelerated the diversification of the export market and the export of goods, and emphasized quality control for export goods (Liu 1998, 140). At the same time, the exchange rate of the Renminbi was unified so as to simplify the trade procedure. As they focused on the huge potentiality of developing countries, it was crucial for the Chinese government to accelerate the linking up of various instruments of economic cooperation (Liu 1998, 140-141). Their effort led to the accelerated growth of China’s exports in the 1990s. Spearheading China’s export promotion, ‘Da Jingmao’ was expected to contribute to the acceleration of ‘reform and opening-up’ that was urged by Den Xiaoping by his influential speeches during his ‘Southern Tour’ (Nanfang Jianghua) of January 1992. The early 1990s was a turning point in China’s reform and opening-up, and in October 1992, the Fourteenth National Congress of the Communist Party finally adopted the goal of the ‘socialist market economy (Shehui Zhuyi Shichang Jingji Tizhi).’

It should be stressed that Wu Yi’s emphasis on the close linkages between aid, investment, and trade in ‘Da Jingmao’ outlined China’s approach to economic cooperation. The idea, which emanated from either local knowledge or the discussion among the Chinese technocrats in the 1980s, was basically explicit knowledge, as the idea was detailed in various official documents. At the same time, it is assumed that ‘Da Jingmao,’ like other policy debates in the era of reform and opening-up, reflected the cultural inheritance of China. China’s approach to reform and opening-up is usually described as gradual and experimental (Bell, Khor, and Kochhar 1993, 2-5). This is in contrast to the ‘big bang’ approach, or the Bretton Woods Institute’s theoretical prescription for the former Soviet Union and Eastern Europe. Most importantly, there was not a detailed blueprint (Prasad 2004, 2). Their common practice of

patiently examining the results of pilot projects in some localities before applying them nationwide, obviously came from China's highly pragmatic traditional wisdom. The pragmatic feature is shown in remarks made by Deng Xiaoping the architecture of reform and opening-up, for example, "crossing the river by feeling the stones under the feet" and "it does not matter whether a cat is white or black, as long as it catches mice." To put it another way, the Chinese way of thinking about policy is rich in tacit knowledge. 'Da Jingmao' is no exception. In our view, the notion of 'Da Jingmao' is accompanied by the two types of knowledge: explicit and tacit.

2.1.3. Study of Japan's aid and ``Trinity Development Cooperation``

Since the mid-1990s, Chinese scholars and experts of economic cooperation have intensively studied Japan's aid giving, in an attempt to draw out hints for China's resurging foreign aid. A good number of Chinese researchers and bureaucrats in the late 1990s and around the turn of century essentially shared the following three views on Japan's aid (Zhang 1996, 63-84; Ou Yang 1998, 27-35; Jin 2002, 150-164; Wang 2005). First, Japan's aid had positive effects on the development of China as well as other Asian countries. Second, the effectiveness of Japan's aid came from its 'win-win' approach, which intended to contribute to the aid recipient's economic development as well as the promotion of Japan's exports. Third, the linchpin of Japan's win-win approach was the notion of 'Trinity Development Cooperation' or close linkages between aid, direct investment, and the promotion of exports from the recipient countries. Such views have been adopted by current Chinese policy makers.

The concept of Trinity Development Cooperation was announced in 1987, in Bangkok, by Hajime Tamura, Minister of International Trade and Industry (MITI), under the title of the 'New AID Plan (New Asian Industries Development Plan), as 'comprehensive economic cooperation packages with the trinity of aid, direct investment, and import from developing countries'. The objective was to promote the export-oriented industries of Asian countries, in

particular ASEAN members, who were desperately pursuing a transformation of their export structure from primary goods to the products of labor/technology-intensive manufacturing (Shimomura 2013, 156; Shimomura & Wang 2013, 118). To achieve this goal, attracting direct investment from export-oriented industries was considered to be crucial. Based on research on the attitude of Japanese investors, which has evidenced the vital role of infrastructure for attracting foreign investors (JBIC, various issues), aid-funded infrastructure construction was accelerated within the Japanese aid structure. This rationale is illustrated in Figure 3.

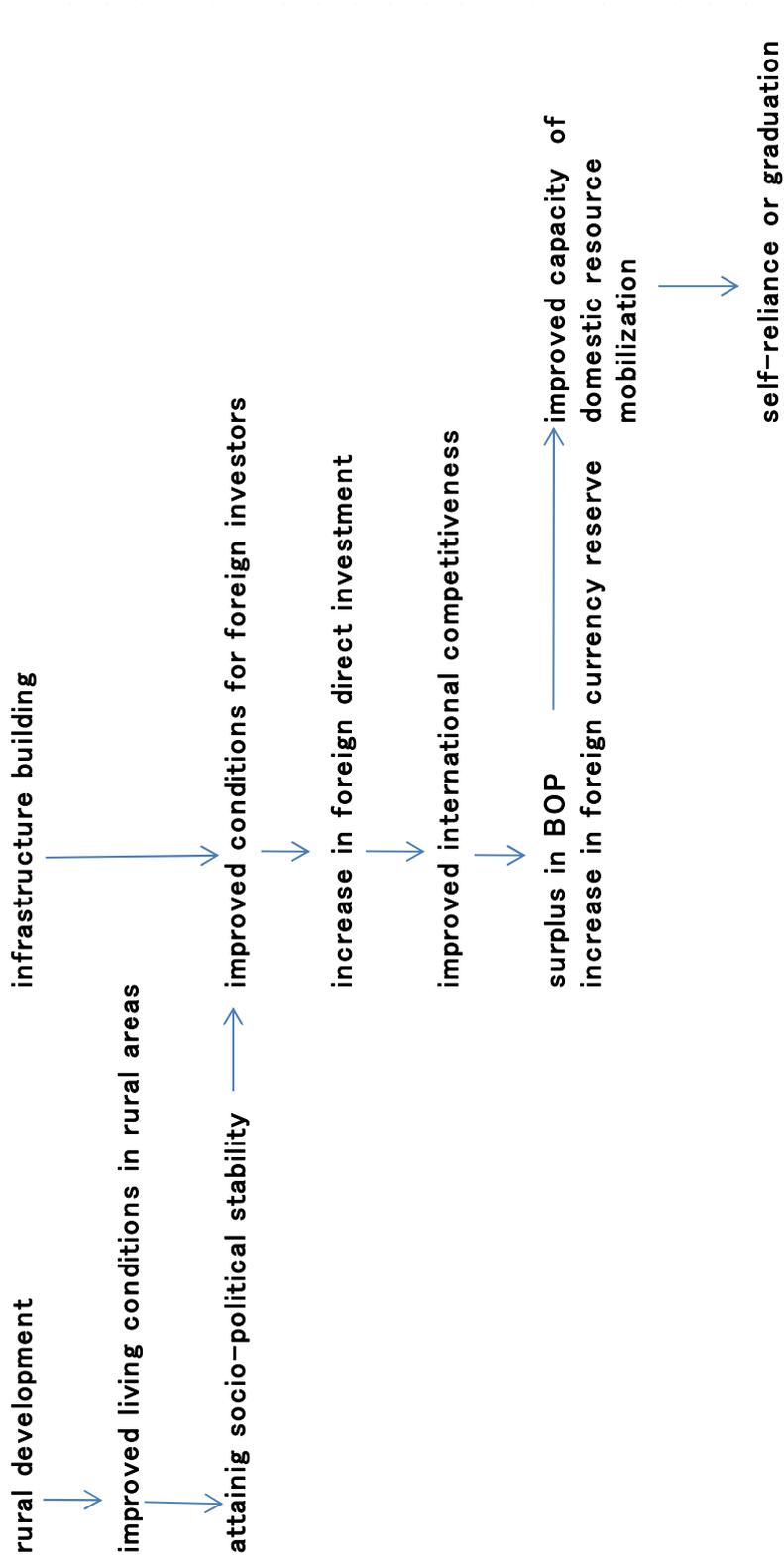


Figure 3. Path to self-reliance/graduation

Source: Prepared by authors

The Trinity Development Cooperation was an example of explicit knowledge, as the detailed explanations were available in MITI's various documents.

Our literature review shows that many Chinese foreign aid experts were interested in the notion of the Trinity Development Cooperation, and they drew hints for China's own foreign aid policy. The aforementioned economist Zhou Baogen, proposed the idea of 'Grand Aid', referring to Japan's 'Trinity Development Cooperation' (Zhou 2010b); the two ideas show basic similarities in spite of their different backgrounds. Jin Xide of the Chinese Academy of Social Sciences claimed that in the middle of the 1990s China began to connect the recipient needs with China's own economic interests taking into consideration the Trinity Development Cooperation (Jin 2004). In our view, Japan's Trinity Development Cooperation furnished the Chinese foreign aid experts with the opportunities to reexamine and improve China's own economic cooperation strategy. The interaction between the Chinese and Japanese economic cooperation strategies was a process of knowledge creation

2.1.4 Case summary

Western observers have repeatedly argued that Japan's approach to aid in the 1970s has been "recycled by China" (Saidi and Wolf 2011). In the same vein, Nissanke and Soderberg (2011, 73) claim China has applied the model employed by Japan in Southeast Asia as a chosen modality, although they also point out "there are considerable differences between Japanese and Chinese aid beyond the apparent similarity." However, this paper has shown that China did not simply borrow a foreign model. Instead, the Chinese foreign aid experts nurtured their model of economic cooperation combining China's own idea of '*Da Jingmao*' and Japan's Trinity Development Cooperation. In our view, the so-called 'Chinese model' of foreign aid or economic cooperation was created through the interaction between local and foreign knowledge. The combination of the two ways of thinking about policy led to today's highly pragmatic Chinese model. Nowadays China extensively applies the results of the knowledge creation to

their own engagement with other developing countries, in particular Sub-Saharan Africa. It is expected that China's knowledge meets with local knowledge and will provoke another series of the chain of knowledge creation.

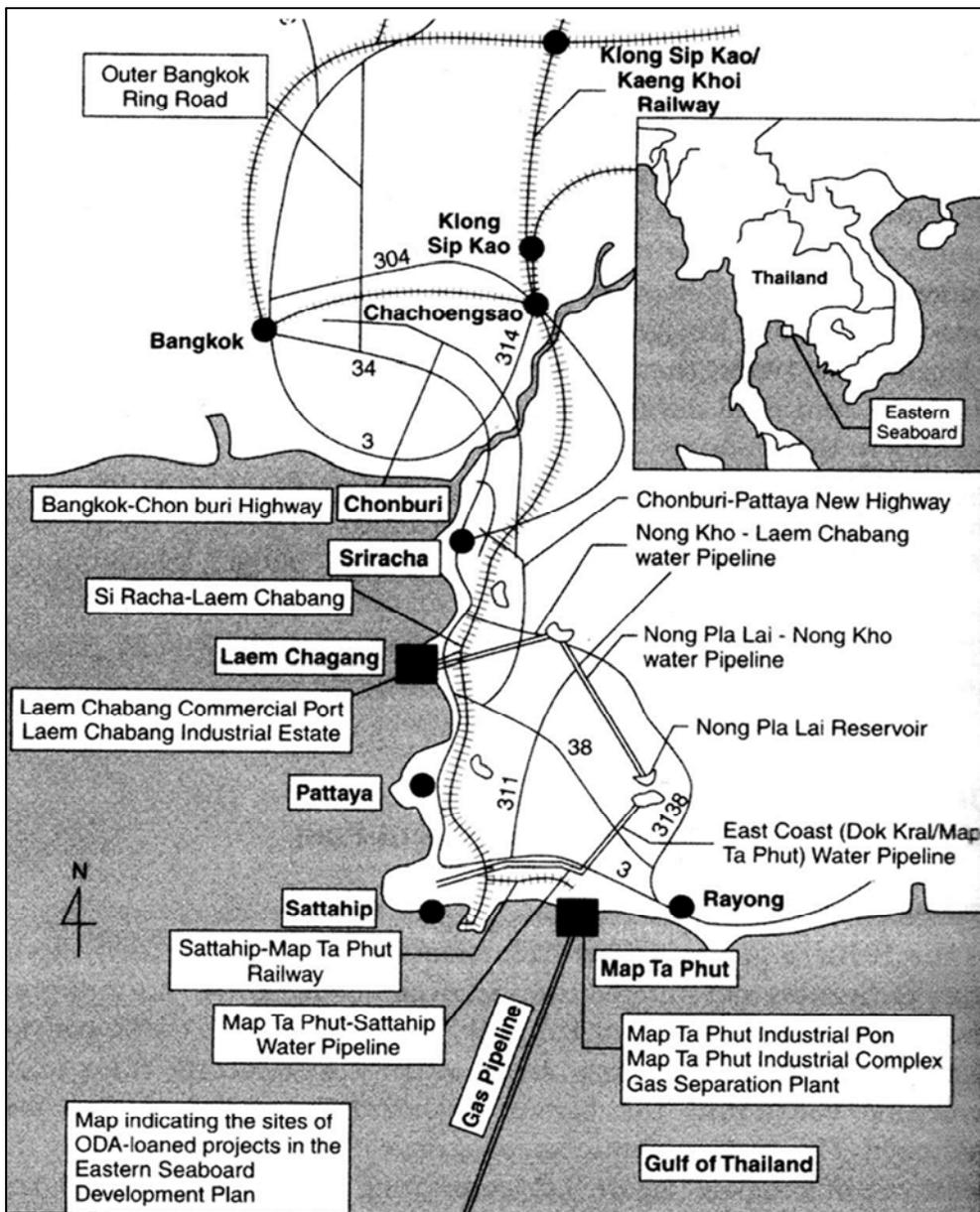
2.2 Case B: Creation of knowledge of a coastal industrial estate management

2.2.1 Thailand's transformation from a major recipient to a new donor

Thailand, once a major aid recipient, has emerged as a new donor since the mid-1990s, having established the Neighboring Economies Cooperation Fund (NECF), the present title of which is the Neighboring Countries Economic Development Cooperation Agency (NEDA), under the Ministry of Finance in 1996; Thailand International Cooperation (TICA) was also established in 2004. Nowadays, Thai leaders, both in the public and private sectors, are keen to make financial as well as technical assistance to neighboring Myanmar, utilizing their experiences of receiving aid. In their efforts, center stage is given to the Eastern Seaboard Development Plan, a gigantic coastal industrial complex located southeast of Bangkok. This case study explores a chain of knowledge creation in which Thailand intends to utilize the knowledge that was created and accumulated during the period it received aid from Japan, in their engagement with Myanmar.

2.2.2 The Eastern Seaboard Development Plan and knowledge creation

The objective of the Eastern Seaboard Development Plan (ESDP) was to build a coastal industrial complex composed of two deep seaports and accompanying industrial estates at Laem Chabang and Map Ta Put. The plan included the construction of a dam and water pipeline system, railways, and roads (Mieno 2013, Figure 4).



Locations of ODA loan projects in Eastern Seaboard Development Plan

Figure 4. Locations of ODA loan projects in Eastern Seaboard Development Plan

Source: JICA

The ESDP was adopted in the Fifth Five-Year Plan (1982-86), was suspended at the end of 1985 due to fierce disputes among the Thai leaders and the strong objection by the World Bank, was resumed one year later, and was completed by the early 1990s with technical and financial

assistance from Japan totaling 180 billion yen. Even before the completion, the ESDP became a magnet for foreign direct investment, particularly because a lot of Japanese manufacturers began to look for production sites abroad in an attempt to overcome the adverse effects of the sharp yen appreciation resulting from the Plaza Accord of 1985. By early 2007, the ESDP area had attracted 14 private industrial estates (there were also two aid funded ones) with more than 1300 factories; most of them were export-oriented and around 500 were auto-related. Most importantly, 360 thousand jobs were created (Shimomura 2013, 158). Describing the ESDP as “a leap into a new era,” *The Nation*, a Bangkok-based newspaper, wrote “[n]early three decades ago, the Eastern Seaboard changed Thailand’s economic landscape” (*The Nation*, March 2, 2007). Referring to the fact that the ESDP generated 16% of Thailand’s GDP in 2010, the National Economic and Social Development Board (NESDB) labels ESDP as “the success story of Japan-Thailand cooperation” (NESDB 2013).

The achievements of the ESDP is attributed to the two aspects of knowledge. First, the ESDP emanated from the innovative idea of the coastal industrial estate, which had been developed in Japan in the 1950s. It was innovative because most of the large industrial areas, such as the Great Lakes in U.S. and the Ruhr region in Germany, were located inland in those days (Takeuchi 1984,160-161). A coastal industrial estate had a big advantage because it enabled drastic reduction of transportation costs due to its geographical closeness to ports. Looking for the engine of outward-oriented industrialization, the Thai leaders were keen to introduce the modern knowledge of coastal industrial estates using the Japanese aid, technical and financial. The technology of coastal industrial estate construction was provided by the Japanese advisers and consultants as a set of explicit knowledge, and was highly appreciated particularly regarding the silting management in the construction of the Map Ta Put Port.⁴ However, this seems to be a traditional pattern of technical transfer from donor to recipient.

⁴ Interview with Dr. Savit Bhotiwihok, Minister, Prime Minister’s Office on November 9, 1998.

Second, and more importantly, the ESDP furnished the Thai leaders with a chance to develop/create their own art of large-scale development project management through the interaction with major donors such as the World Bank and Japan. Their mission was to construct a gigantic infrastructure project in an orderly manner and without notable corruption. The Thai government suffered from serious challenges during the implementation but successfully overcame them (Shimomura 2013, 107-111). Challenges were caused primarily by the World Bank's grave concern about the fiscal burden of gigantic investment. The Bank urged the Thai government to drop the construction of two ports and utilize the existing ones, including the river port of Bangkok. The Bank's skeptical position was shared by a group of Thai macroeconomists and provoked fierce disputes among technocrats about the macro- and microeconomic feasibility of the plan. The Thai technocrats thoroughly reexamined the project feasibility, the balance of payment sustainability, and so on. One camp attempted to show that the World Bank's comments were true. The rival camp tried to demonstrate that there was evidence of feasibility and sustainability. In spite of the fierce disputes, the plan was duly completed, although with some delay due to the suspension. While one major component, a natural gas-based fertilizer plant, was abandoned, the result of an ex-post evaluation shows that the project could suffer a large loss if realized due to an appreciation of the yen and the slump in the international fertilizer price (JBIC 2000, 81-82). Most importantly, there was no notable news of corruption.

The Thai government's achievement of coping with challenges is primarily attributed to the fact that the rivalry and fierce disputes between the supporters and critics worked as an effective mechanism of checks and balances *a la Thai* (Shimomura 2013, 114-120). Prime Minister Prem Tinsulanond took advantage of the rivalries and played the rivals off against each other by exploiting their fears of each other. In this context, it should be stressed that technocrats could concentrate on pursuing professional and rational arguments, owing very much to Prime

Minister's political insulation from pressure groups such as politicians and generals; Prem's strong bargaining power based on his military background seemed to work well in maintaining political insulation. Moreover, in conjunction with the aforementioned rivalries, the role of the free press contributed to transparency in policy making. The combination also effectively prevented serious corruption as technocrats were afraid of leaks by the opponents. In our view, the checks and balances *a la Thai*, being complemented by political insulation and the free press, took advantage of faction rivalry among the Thai leaders. The power struggle between rival camps is generally found in the Thai society. Richard Doner and Anek Laothamatas analyzed how the close proximity between experienced technocrats and the prime minister had worked well to control the negative effects of faction rivalry in those days (Doner and Laothamatas 1994). The rise of Thaksin Shinawatra in the late-1990s drastically changed the rules of the game.

The effective administration of ESDP, in our opinion, is attributed to the combination of tacit and explicit knowledge. Obviously, the art of getting thing done *a la Thai* in the case of the ESDP is far from textbook theory. In other words, there appears to be a kind of tacit knowledge deeply embedded in the Thai socio-cultural system. It should be stressed that said tacit knowledge was triggered by the strained donor-recipient relationship between the Thai government and the World Bank. At the same time, the art of getting things done in Thai way was complemented by the explicit knowledge of the worth of political insulation and free press. Also, during the dispute the technocrats tried to support their arguments with macro- and microeconomic theory and the modern technology of coastal industrial complex management.

2.2.3 Thailand's cooperation with Myanmar's Dawei Special Economic Zone

The Dawei Special Economic Zone (DSEZ) has already begun to attract attention internationally. Its basic concept is the construction of a deep sea port with industrial estates in southeast Myanmar. As the first modern coastal industrial complex in the Bay of Bengal, the DSEZ is

expected to become the engine of Myanmar’s export-oriented industrialization. In addition, it will have tremendous impacts on the Thai economy as it drastically reduces the transportation costs for the manufacturers located in the Indochina Peninsula, particularly Thailand, enabling them direct access to the Indian Ocean and beyond.

As Figure 5 illustrates, the DSEZ is a linchpin of a new supply chain linkage connecting Myanmar with Bangkok/ESDP, Phnom Penh, and Ho Chi Minh City through the ‘Southern Corridor’ (Boonsongpaisan 2013; Termittayapaisith 2013).



Figure 5. Supply chain linkages connecting Myanmar with Thailand and Vietnam

Source: JICA

It is well recognized that the Myanmar government lacks the basic knowledge and experience to achieve this large scale and complicated project. Under the circumstances, the Thai leaders are keen to assist Myanmar to realize the DSEZ, recognizing the basic similarities

between DSEZ and ESDP. What part of their ESDP experience could be relevant and useful? According to the NESDB's interpretation, it is the 'policy and implementation mechanism' of the implementation of the ESDP : the Eastern Seaboard Development Committee (ESDC) which was chaired by the Prime Minister. According to the NESDB, the establishment of the ESDC was the key to success (Termpittayapaisith 2013). As the secretariat office, the ESDC (a part of the NESDB), had the authority and responsibility of supervising, examining, monitoring, evaluating the implementation of individual projects, and making strategic decisions, paying due attention to risks and opportunities. In attempting to demonstrate their soft power, the Thai government is keen to promote the 'policy and implementation mechanism' as an ESDP-based explicit knowledge. Apparently, explicit knowledge is easier to explain, transfer, and disseminate, in comparison to tacit knowledge.

When President Thein Sein of Myanmar visited the ESDP area in 2012, Arkhom Termpittayapaisith, NESDB Secretary General, made a briefing and stressed that the policy and implementation mechanism of ESDC made a valuable contribution to the achievement of the ESDP. Based on the experience of the ESDP, he strongly recommended the introduction of a similar institution for the successful management of the DSEZ. It is said that his point was highly appreciated by the President of Myanmar;⁵the organization structure of the Myanmar-Thailand Joint Working Mechanism was established in November 2012, in accordance with the experience of ESDC. At the same time, fully recognizing their limited capacity for financial and technical assistance, the Thai leaders are exploring Japanese assistance to DSEZ.

2.2.4 Case summary

The case of the Eastern Seaboard Development Plan (ESDP) shows the important role of local and tacit knowledge. In this case, faction rivalry transformed into the mechanism of checks and balances *a la Thai*. The evolution of the aid recipient's knowledge was triggered by the strained

⁵ Hearing from the NESDB officials on July 24 2013.

donor recipient relationship between the Thai government and the World Bank, and the resulting fierce dispute among the Thai technocrats. This means that the knowledge was created or developed through the interaction between the donor and the recipient, particularly in response to the critical view of the World Bank. It should be noted, however, the local/tacit knowledge contributed to the achievement of the ESDP, in conjunction with the external/explicit knowledge of coastal industrial complex construction, which was supported by the Japanese advisers during the period of aid implementation. The Thai policy-makers effectively integrated the two different types of knowledge.

Based on the above experience, the Thai leaders are confident about the value of their knowledge of managing a gigantic infrastructure project, and are keen to utilize the knowledge in their assistance to Myanmar. In an attempt to attract the attention of the Myanmar leaders, the Thai leaders emphasized the coordination function of the Eastern Seaboard Development Committee (ESDC); the pivotal role of a coordination body was what they extracted from the aid receiving experiences of the ESDP. The effectiveness of a coordinating body, the ESDC, has been clearly illustrated in various Thai official documents. In this way it was transformed into explicit knowledge and then proposed to Myanmar. The interaction between the Myanmar local knowledge and Thai explicit knowledge is expected to create new knowledge during the implementation of the DSEZ.

2.3 Case C: A series of development endeavors in the downstream of TVA

2.3.1 The four stages of the Case

This case is composed of four stages. The first stage starts with Japan's learning of the model of TVA (the Tennessee Valley Authority)⁶ in the early postwar era. Being heavily impressed by the TVA model as a symbol of democracy, a group of Japanese policy-makers attempted to apply the model to their regional development plans. Although the attempts are considered as basically abortive due to various bureaucratic impediments (Mikuriya 1989, 270-272; Sato 2011, 90). One of the applications, 'The Kiso River Comprehensive Development Plan', a part of which was the 'Aichi Water Canal Project' ('Aichi Canal'), was funded by the World Bank, and took the role of incubator of the Japanese way of TVA model. More specifically, the Aichi Canal, which had been implemented in the 1950s and 1960s, was recognized as an 'ideal type' of comprehensive regional development, by Japanese development engineers. It evolved afterwards as a landmark of Japan's approach to aid. The second stage is Japan's assistance to the Brantas River Basin Development Plan ('Brantas Plan') of Central Java, Indonesia. In Tsuneaki Yoshida's view, the plan was designed with the experience of the Aichi Canal in mind, and the basic concept of the Aichi Canal emanated from the TVA model (Yoshida 2006; Nissanke and Shimomura 2013, 25-30). The third stage is the evolution of the concept of 'One River, One Plan, One Management.' 'One River, One Plan, One Management,' which emphasizes the concept of integration, was, according to Yoshida's interviews with Japanese engineers⁷ who were in charge of the 'Brantas Plan,' created through a collaboration between Indonesian and Japanese engineers. The final stage is the establishment of Integrated Water Resources Management

⁶ The Tennessee Valley Authority was established by Congress in 1933 to address a wide range of environmental, economic, and technological issues, including the delivery of low-cost electricity and the management of natural resources. By the end of the World War II, TVA had completed a 650-mile (1,050-kilometer) navigation channel the length of the Tennessee River and had become the nation's largest electricity supplier. Electric lights and modern appliances made life easier and farms more productive. Electricity also drew industries into the region, providing desperately needed jobs (<http://www.tva.gov/abouttva/history.htm>).

⁷ Interviews with the two former Nippon Koei engineers Mr. Kazuo Sawatani and Mr. Yuzo Marusugi, which were made by Professor Tsuneyuki Yoshida on July 5 and July 6, 2013 (Yoshida 2013).

(IWRM), a regional institute in Asia. The basic philosophy of IWRM was built up by fully taking into account the achievements of the Brantas Plan.

2.3.2 TVA and the Aichi Canal

The linchpin of the TVA model is ‘integration’ (Sato 2011,81). It was a concerted endeavor of resource development based on grassroots democracy, paying due attention to the welfare of residents. A large-scale dam was located at the center of the river basin development model. The achievements of TVA were introduced to Japan in the early post-war era, by a group of New Dealers who were influential at the General Headquarters (GHQ) of the Allied Powers. The intention of the New Dealers was to promote reform and democratization in rural areas in Japan through the dissemination of the TVA model (Sato 2011, 78-79). In response, a group of Japanese policy makers were attracted by TVA as a symbol of democracy. This enthusiastic group included the Economic Stabilization Board economists and planners Shigeto Tsuru and Saburo Okita (Mikuriya 1989, 269; Sato 2011, 83-87). Based on the study of TVA, this group began to seek ways in which to apply this model to regional development plans. However, serious institutional constraints, which were endemic in the Japanese bureaucratic system, prevented their attempt (Sato 2011, 88-91). The realization of an integrated plan like TVA required the delegation of power and authority to a single organization in charge (Sato 2011, 80-83). It was difficult, however, to meet the requirement in Japan’s public sector, where several line ministries had claimed their share of the decision making power in-line with their own missions, principles, and vested interests in the area of river basin development. At least four line ministries were in charge: the Construction Ministry managed the river; the Ministry of International Trade and Industry was in charge of industrial water supply; the Agricultural Ministry handled irrigation; and the Ministry of Welfare dealt with drinking water supply (Shimokobe 1994, 43). Under the circumstances, they had to resort to a round table conference

with the stakeholders, rather than management by a single authority like the TVA. This constraint caused tremendous difficulty for TVA-type integration.

In those days, there were two different and competing lines of policy on regional development in Japan. One was based on the TVA model, as mentioned above, and was promoted by the Economic Stabilization Board, who tried to apply the TVA model to two drainage systems in the northern Japan: the Kitakami River and the Tadami River. The other approach was promoted by the Construction Ministry, and stressed decentralization or delegation of power from the central government to the prefectures (Mikuriya 1989, 270). In the conflict between the two ways of delegating power, one stressed the importance of communities and the other claimed stronger autonomy for the prefecture governments (Mikuriya 1989, 270-271). In reality, it was expected that a comprehensive regional development plan would create a vested interest among politicians, contractors, and prefecture government officials. They knew that huge budget appropriation by the central government would be available under comprehensive regional development plans. As a result, nationwide enthusiasm for the TVA model and rent seeking occurred in combination and led to a big number of applicants (51) for the Comprehensive Development Plan for Specially Designated Area (Shimokobe 1994, 41). At last 21 plans were chosen. Due to the excessively large number, it was not possible to give priority to any one of the plans; because of the lack of priority, the attempted application of the TVA model turned into a fiasco. Nevertheless, the achievement of the Aichi Water Canal Project, a part of the Kiso River Comprehensive Development Plan (KRCDP) in central Japan, attracted nationwide attention, and became an incubator for the landmark of Japan's aid.

The Aichi Canal was a community-based project. It was initiated on the proposal of a farmers group from the Chita Peninsula, Aichi Prefecture, whose area had suffered from water shortage for long time. The Aichi Canal was composed of irrigation, portable and industrial water supply, and hydropower generation (Nakayama and Fujikura 2013, 52). The 'Aichi Canal' was planned

in 1949, and was financed by the World Bank loan (from 1957) in the amount of 4.9 million U.S. dollars or 4 per cent of the total cost (Nissanke and Shimomura 2013, 27);. The canal was completed in 1961. The Aichi Canal Public Corporation, an implementation agency, was established in 1955, and played the central role in planning, implementation, and management of the canal project.

It should be noted that, according to Atsushi Shimokobe, a leading architect of long-term land development plans in Japan, the pre-modern Japan had an idea similar to the comprehensive drainage management concept of the TVA. In the Edo era, rivers were managed in a comprehensive manner, as a total system controlling the up- and down-stream. Shimokobe claims that, although this knowledge was lost after the Meiji Restoration or the beginning of modernization, the knowledge had been inherited and this made it possible for the Japanese policy makers to accept the drainage management concept (Shimokobe 1994, 12, 163-167). Given the existence of local and tacit knowledge of drainage management, it was possible for the Japanese stakeholders to accept the idea of the TVA-type model of comprehensive regional development, according to Shimokobe, although they were hampered by various bureaucratic constraints.

The Aichi Canal, an origin of Japan's model of comprehensive regional development, is regarded as the result of interaction between Japanese traditional tacit knowledge and the external explicit knowledge of the TVA model.

2.3.3 The Brantas River Basin Development Plan of Central Java

While the experience of the Aichi Canal was recorded in documents and added to the intellectual stock, it was also transformed into an 'ideal type'. Max Weber's 'ideal type' is "a model that could be used to highlight particular aspects of structures found among the empirical data" and "to predict the recurrence of certain regularities" in the pursuit of particular goals (Deutsch 1963,

45-47); it was exactly what occurred in the case of the Brantas River Basin Development Plan (Brantas Plan) of Indonesia.

The implementation of the Brantas Plan was started in the 1950s and lasted for more than 40 years. In the beginning, the South Trungagung Irrigation Project was constructed (1959-61) using Japan's reparation scheme. Being highly impressed by the success of that project, the government of Indonesia instructed Nippon Koei, the Japanese consulting firm in charge of the Trungagung Irrigation Project, to prepare a master plan for a comprehensive development plan for the Brantas River Basin (later this turned into the first master plan of Brantas Plan), which was executed under Japan's financial and technical assistance (Nippon Koei 1981; Okaji 1990). The purpose of this comprehensive development plan for the catchment area of 12,000 square kilometers, was to control floods, increase agricultural production, generate electric power, and prevent natural disasters including landslides. Japan has provided financial and technical assistance for the construction of 31 projects (9 multi-purpose dams, 6 barrage projects, 8 irrigation projects, 6 river improvement projects, and 2 volcanic debris control projects) since the 1960s. The total amount of aid has been nearly 170 billion yen (Fujimoto 2013).

A Japanese consulting firm, Nippon Koei, has persistently had contracts for planning, designing, and advisory services for construction for the past four decades. While Nippon Koei itself did not participate in the Aichi Canal and they were not in the position to directly inherit the knowledge created through the implementation of the Aichi Canal, the Japanese irrigation and rural development engineers, including the Nippon Koei people, shared what the Japanese learned through the Aichi Canal and were inspired by it (Kato 2013). At the interviews with Tsuneaki Yoshida, the two former Nippon Koei engineers who had been in charge of the Brantas Plan, Messrs. Marusugi and Sawatani, stated that they kept in mind the experience of the Aichi Canal. While the detailed written information of the Aichi Canal was not used explicitly in the

technical assistance to the Brantas Plan, and no explicit knowledge transfer is recorded, the Nippon Koei engineers devoted themselves to achieving the essential features of the Aichi Canal (Yoshida 2006; Yoshida 2013). To put it another way, the Aichi Canal functioned as an ‘ideal type.’

The Indonesian and Japanese engineers worked jointly and closely, sharing the same cognition model based on the ideal type of the Aichi Canal. The outcome of the long-term commitment of Nippon Koei is significant in the field of human capital development. The Brantas Office, which was established in 1965 in Malang, east Java, has taken a crucial role in Nippon Koei’s endeavor of human capital development. In addition to on-the-job-training on the basis of the ‘work together and live together’ principle, the Brantas Office repeatedly hosted workshops, seminars, and forums for the Indonesian engineers and technicians, in order to transfer theoretical and practical knowledge. By 1990, the graduates of the Brantas School reached to 7,000. Afterwards, the Brantas Office developed to a nationwide water resources management organization (Perum Jasa Tirta Corporation), and through this institution the Brantas alumni effectively contributed to the dissemination of knowledge nationwide (Fujimoto 2013, 184-185, 192; Yoshida 2013). According to the former Nippon Koei engineers, the philosophy of ‘One River, One Plan, One Management’ emerged as a result of the collaboration between the Indonesian and Japanese engineers (Yoshida 2013).

2.3.4 One River, One Plan, One Management

‘One River, One Plan, One Management’ is the philosophy of the Brantas Plan. Apparently, ‘One River’ means the Brantas River. ‘One Plan’ is composed of a series of four master plans, which were formulated consecutively one after another between the early 1960s and 1990s, under Japanese aid. ‘One Management’ refers to the Brantas Office, which was established in 1965 as the Plan Implementation Unit with independent authority covering broad areas of project implementation from budget administration to staff recruitment. There is a similarity

between the Brantas Plan and the Aichi Canal in this regard. In both cases, the implementation agencies (the Brantas Office and the Aichi Canal Public Corporation) played central roles in the management of multi-goal projects. What was unique about the Brantas Plan is that one charismatic figure, Suryono, led the organization for 14 years from its inauguration (Fujimoto 2013). A lot of Japanese participants, public and private, give their highest evaluation to his capability and leadership (Fujimoto 2013; Yoshida 2006; Yoshida 2013). Suryono's strong leadership and long-term commitment, together with the full delegation of power from the Indonesian and Japanese governments, enabled integration and effective coordination of... this gigantic plan.

How did the idea of 'One River, One Plan, One Management' evolve? Messrs. Marusugi and Sawatani state clearly that the concept was raised by Suryono around 1990, and the Nippon Koei people did not directly contribute to the evolution (Yoshida 2013). It is assumed that the Aichi Canal worked as the ideal type behind the evolution of the new idea. The thinking of the Japanese irrigation and rural development engineers, reflecting the ideal type of the Aichi Canal, was gradually shared by the Indonesian engineers over the four decades of "working together and living together." The shared cognition model between the Indonesian and Japanese participants finally led to Suryono's remark of 'One River, One Plan, One Management.' In other words, 'One River, One Plan, One Management' was created as a piece of local knowledge through the interaction between the engineers of the two countries. It was tacit knowledge as it was not expressed in a concrete and definite manner. Here we have another case of knowledge creation based on the experiences of receiving aid.

2.3.5 IWRM

In 1992, the International Conference on Water and Environment was held in Dublin. The main subject was how to improve the management of river water resources in developing countries. The outcome of the conference was the launch of the concept of Integrated Water Resources

Management (IWRM). The proposed concept of IWRM reflects, to a large extent, the achievement of the Brantas Plan, which is widely known internationally, particularly in Asia, as a valuable reference case. Moreover, the lesson of the Brantas Plan was adopted by the Asian Development Bank as a model for water policy (Yoshida 2006; Nissanke and Shimomura 2013, 29). The Asian Development Bank, together with the Japanese government, established the Network for Asian River Basin Organization (NARBO) with the participation of around fifty organizations in charge of river basin management in Asia. Assuming the mission of disseminating the achievements of the Brantas Plan, the NRABO nominated a high-ranking Indonesian official as its first Secretary General (Yoshida 2013). The locally created knowledge of ‘One River, One Plan, One Management’ was transformed into internationally shared explicit knowledge through NARBO’s various documents.

2.3.6 Case summary

We have reviewed the chains of knowledge creation, linking the TVA model, the Aichi Canal, the Brantas Plan, ‘One River, One Plan, One Management,’ and IWRM. While the link is indirect and implicit, they share a basic element: the pursuit of ‘integration.’ In the evolution of the chains of knowledge, local intellectual assets that are embedded in the socio-cultural inheritance of individual society, played important roles.

At the beginning, the TVA model was introduced to Japan as explicit knowledge. Various literatures were published in an effort to introduce TVA to the Japanese people (Mikuriya 1989, 280-281). A group of Japanese technocrats held a weekly workshop and obtained knowledge of TVA from Edward Ackerman, a Harvard University geographer who was an advisor to the GHQ (Sato 2011, 83-85). Although the efforts taken to apply the TVA model to Japan’s regional development are not considered to have been fruitful, the experience of the Aichi Canal, one of the application efforts, was shared by the Japanese engineers as a piece of explicit knowledge. More importantly, the Aichi Canal became an ideal type for the Japanese

regional development engineers, including the experts who were in charge of the Brantas Plan. It should be noted that the Aichi Canal was not ‘directly’ relevant to the Brantas Plan. It worked as an ideal type in a tacit way through the Japanese engineers’ longstanding practice of “working together and living together” with their Indonesian counterparts. Their four decades long collaboration finally created the idea of ‘One River, One Plan, One Management.’ This philosophy shares one important feature with the TVA model: the emphasis on ‘integration.’ While the idea was tacit knowledge without concrete written documents, it later transformed into explicit knowledge of IWRM by an international organization (the NARBO).

What occurred was more than a simple one-way spillover or transfer. We have found chains of knowledge creation in Japan and Indonesia through the interaction between the donor and recipient, or external and local knowledge.

3. Conclusion and policy implication

This paper has addressed the relationship between aid receiving and giving, based on a hypothetical model highlighting the aid recipient’s ‘knowledge creation,’ or the evolution of a new development knowledge. It tested the plausibility of the hypothesis through three in-depth case studies in East Asia. The results show that the four aid recipients, namely China, Indonesia, Japan, and Thailand, created new knowledge of their own during the period they received aid, through their interaction with the donors. These cases illustrate knowledge creation by various aid recipients, by combining local and foreign knowledge, or tacit and explicit knowledge. The aid recipients nurtured the acquired knowledge and applied it to other countries through financial and/or technical cooperation. Contrary to a generally accepted universal model, the essential feature of these cases is not a one-sided technical transfer from a donor to a recipient. . Instead, our findings show evidence of the existence of chains of knowledge creation.

As the case studies strongly suggest that the proposed hypothetical model is plausible, the next research agenda is to test the hypothesis with a larger number of case studies in Asia (in

particular Korea, Taiwan, and India), Latin America and Sub-Saharan Africa.

The fact that the new donors' aid activities are based on their local, frequently tacit knowledge, implies a diversity of donors, while a group of new donors, Asian donors in particular, share similar features of aid giving due to similar socio-cultural inheritance and their common experiences with the traditional donors. The role of local/tacit knowledge leads to a wide variety of new donors, as local/tacit knowledge is deeply embedded in an individual society's socio-cultural inheritance; this is illustrated by China's practical wisdom to "feel the stones under the feet," the river basin management of pre-modern Japan, and the faction rivalry management in Thailand.

The knowledge creation experience of emerging donors also contributes to the stock of knowledge in development cooperation. A source of strength for emerging donors is that an important part of their knowledge has been recently formulated through the experience of receiving aid. In other words, their knowledge is relevant to the current problems faced by aid recipients. The emerging donors could contribute to the global development agenda in their own ways, by effectively utilizing their recent knowledge creation experiences. Although the international aid community tends to impose a universal model of aid giving, in reality, according to the findings of this paper, the intellectual assets of individual donors are diverse. One policy agenda emerges from this observation; for the purpose of enhancing aid effectiveness, it is crucial to utilize donor's diversity in a constructive way.

References

- Arndt, Channing. 2000. Technical Cooperation. In *Foreign Aid and Development: Lessons Learnt and Directions for the Future*, ed. by Finn Tarp. London: Routledge.
- Bell, Michael, Hoe Ee Khor, and Kalpana Kochhar. 1993. China at the Threshold of a Market Economy. Occasional Paper 107. Washington, D.C.: International Monetary Fund.
- Boonsongpaisan, Niwattumrong. 2013. Dawei Project the New Asian Gateway. PPT Material for the Tokyo: Roadshow, 22 May 2013.
- Deutsch, Karl. 1963. *The Nerves of Government: Models of Political Communication and Control*. New York: The Free Press.
- Doner, Richard and Anek Laothamatas. 1994. Thailand: Economic and Political Gradualism. In *Voting for Reform Democracy, Political Liberalization, and Economic Adjustment*, ed. Stephan Haggard and Steven Webb. New York: Oxford University Press.
- Fujimoto, Koji. 2013. Brantas River Basin Development Plan of Indonesia. In *Aid as Handmaiden for the Development of Institutions: A New Comparative Perspective*, ed. Machiko Nissanke and Yasutami Shimomura. London: Palgrave Macmillan.
- JBIC [various issues]. Report on Overseas Business Operations of Japanese Manufacturers. Tokyo: Japan Bank for International Cooperation.
- JBIC. 2000. En-Shakkan Anken Jigo-Hyoka Hokokusho [Ex-Post Evaluation Report of Yen Loan Funded Projects]. Tokyo: Japan Bank for International Cooperation.
- Jerve, Alf and Machiko Nissanke. 2008. Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa: Framework Paper. JBICI Research paper No. 36-1. Tokyo: JBIC Institute.
- Ji, Chongwei. 1988. Guanche yanhai diqu fazhan zhanlüe zhong de ruogan zhengcexing wenti [Some policy issues in the implementation of coastal development Strategy]. Guoji Jingji Hezuo [International Economic Cooperation] No.5.
- Jin, Xide. 2002. Tettei Kensho Nihon-Gata ODA Hi-Gunji Gaiko no Kokoromi. Tokyo: Sanwa Shoseki [Examining Japan's ODA Model An Attempt of Non-Military Diplomacy], [Ribei Zhengfu Kaifa Yuanzhu, Beijing, Social Science Academy Press].
- . 2004. Sengo Chugoku Gaikou to Taigai Enjo [Diplomatic policy and foreign aid of China after the World War II]. In *Chugoku Shin-Taisei-Ka ni okeru Shomondai* [Issues under the China's New Regime]. Tokyo: Japan Center for International Finance.
- Kato, Kazunori. 2013. In the Days When We were Assisted – A Case Study of an Irrigation Project Financed by International Agencies. JICA Discussion Paper. Tokyo: JICA Research Institute.
- Kitano, Naohiro and Yukinori Harada. 2014. Estimating China's Foreign Aid 2001-2013. JICA-RI Working Paper 78. Tokyo: JICA Research Institute.
- Kobayashi, Takaaki and Yasutami Shimomura. 2013. Aid volume in a historical perspective. In *A Study of China's Foreign Aid: An Asian Perspective*, ed. Yasutami Shimomura and Hideo Ohashi. London: Palgrave Macmillan.
- Liu, Xiangdong. 1998. Zhongguo Duiwai Jingmao Zhengce yu Gaige Zonglan [Overview of China's Foreign Economic & Trade Policies and Reform]. Beijing: China International Economy and Trade Publisher.
- . 2011. Deng Xiaoping Duiwai Kaifang Lilun de Shijian [Practice of Deng Xiaoping's Theory of Opening Up]. Beijing: China Foreign Economic Relations and Trade Publishing House.
- Mieno, Fumiharu. 2013. The Eastern Seaboard Development Plan and industrial cluster in Thailand: A quantitative overview. In *Aid as Handmaiden for the Development of Institutions: A New Comparative Perspective*, ed. by Nissanke, Machiko and Yasutami Shimomura. London: Palgrave Macmillan.

- Mikuriya, Takashi. 1989. "Senji Sengo no Shakai [Japanese Society in the Wartime and Post War Era], Keikaku-ka to Minshu-ka [From the Era of Planning to Democratization], Nihon Keizai-shi [An Economic History of Japan] Vol.7. Tokyo: Iwanami Shoten.
- Ministry of Finance [Japan]. 1983. Showa Zaisei-shi [History of Fiscal Policy in Showa Era], Tokyo. Toyo: Keizai Shinpo-sha.
- Nakayama, Mikiyasu and Ryo Fujikura. 2013. Technology transfer and technology development in post-World War II Japan triggered by World Bank projects. In *The Rise of Asian Donors: Japan's Impact on the Evolution of Emerging Donors*, ed. by Sato, Jin and Yasutami Shimomura. London: Routledge.
- NESDB. 2013. Vision of Dawei: The Future of Asia. mimeo.
- Nippon Koei. 1981. Nihon Koei 35 Nenshi [History of 35 Years of Nippon Koei]. Tokyo: Nihon Koei.
- Nissanke, Machiko and Marie Soderberg. 2011. Can China's Engagement Make a Difference to African Development? Stockholm: The Swedish Institute of International Affairs.
- Nissanke, Machiko and Yasutami Shimomura. 2013. Institutional evolution through development cooperation: An overview. In *Aid as Handmaiden for the Development of Institutions: A New Comparative Perspective*, ed. by Nissanke, Machiko and Yasutami Shimomura. London: Palgrave Macmillan.
- Nonaka, Ikujiro and Noboru Konno. 2003. Chishiki Sozo no Hoho-Ron –Knowledge Worker no Saho [Methodology of Knowledge Creation –Principle of Knowledge Worker]. Tokyo: Toyo Keizai Shinpo-sha.
- Nonaka, Ikujiro. 2006. Knowledge Creation in the Convenience Store Industry: Seven-Eleven Japan. In *Japan, Moving Toward a More Advanced Knowledge Economy*, ed. by Nissanke, Machiko and Yasutami Shimomura. Volume 2: Advanced Knowledge-Creating Companies. Washington, D.C.: World Bank.
- Okaji, Testuro. 1990. Indonesia Brantas gawa ryuiki sougou kaihatsu [Comprehensive development plan of the Brantas Basin in Indonesia]. *Doboku Gakkai-shi* [Japan Society of Civil Engineers Magazine].
- Ou Yang, Jun. 1998. Lengzhan hou de riben dui dongnanya guanxi [Japanese relations with the southeastern countries in post-Cold War era]. *Southeast Asia* 3: 27-35.
- Prasad, Eswar ed. 2004. China's Growth and Integration into the World Economy Prospects and Challenges. Occasional Paper 232. Washington, D.C.: International Monetary Fund.
- Saidi, Myriam and Christina Wolf. 2011. Recalibrating Development Co-operation: How Can African Countries Benefit from Emerging Partners? Working Paper 302. Paris: OECD Development Centre.
- Sato, Jin. 2011. *Motazaru Kuni no Shigen-ron Jizoku Kano na Kokudo wo Meguru Mouhitotsu no Chie* [Resource Thinking of the 'Have-Nots': Sustainability of Land and Alternative Vision in Japan]. Tokyo: University of Tokyo Press.
- . 2013. Introduction aiding development — how does recipient experience count? In *The Rise of Asian Donors Japan's Impact on the Evolution of Emerging Donors*, ed. Jin Sato and Yasutami Shimomura. London: Routledge.
- Shimokobe, Atsushi. 1994. Sengo Kokudo Keikaku heno Shogen [A Testimony to Post-War Era Land Planning]. Tokyo: Nihon Keizai Hyoron-sha.
- Shimomura, Yasutami. 2013. The Japanese view: With particular reference to the shared cognition model in Asia. In *A Study of China's Foreign Aid: An Asian Perspective*, ed. Yasutami Shimomura and Hideo Ohashi. London: Palgrave Macmillan.
- Shimomura, Yasutami and Wang Ping. 2013. The evolution of 'aid, investment, trade synthesis' in China and Japan. In *The Rise of Asian Donors: Japan's Impact on the Evolution of Emerging Donors*, ed. Jin Sato and Yasutami Shimomura. London: Routledge.

- Takeuchi, Hirotaka. 2006. The New Dynamism of the Knowledge-Creating Company. In *Japan, Moving Toward a More Advanced Knowledge Economy, Volume 2: Advanced Knowledge-Creating Companies*, ed. Hirotaka Takeuchi and Tsutomu Shibata. Washington, D.C.: World Bank.
- Takeuchi, Yoshio. 1984. Rinkai kogyo chitai no kiso [Foundation of coastal industrial estate. In *Shogen: Kodo Seicho-ki no Nippon* [Testimony to Rapid Growth Era Japan], ed. Ekonomisuto Henshu-bu [Editorial Board of the Economist Japan]. Tokyo: Mainichi Shinbun-sha.
- Termpittayapaisith, Arkhom. 2013. Thailand's Economic-Industrial Development and ASEAN Connectivity: Case of ESB and Dawei Linkage. Presented to President of the Republic of the Union of Myanmar, 22 July 2012.
- Nation. 2007. March 2.
- Wang, Kun. 2005. *Riben Duihua ODA de Zhanlüe Siwei ji Qidui Zhongri Guanxi de Yingxiang* [Japan's ODA to China: Strategic Thinking and Its Impact on the Sino-Japanese Relations]. Beijing: Social Science Academy Press.
- Wang, Ping. 2013. The Chinese View: Reflection of the long-term experiences of aid receiving and giving. In *A Study of China's Foreign Aid: An Asian Perspective*, ed. Yasutami Shimomura and Hideo Ohashi. London: Palgrave Macmillan.
- Web page of the Tennessee Valley Authority [<http://www.tva.gov/abouttva/history.htm>].
- Yoshida, Tsuneaki. 2006. Japan's Experience in Water Resources Development – A Case Study on the Aichi Canal Project Financed by the World Bank. mimeo.
- . 2013. Brantas Gawa Ryuiki Souggou Kaihatsu no Concept 'One River, One Plan and One Management' ha Ikani Keisei Saretaka. mimeo.
- Zhang, Guang. 1994. Riben dui dongnanya de jingji yuanzhu zhengce [Studies on the Japanese economic assistance to Southeast Asia]. *Southeast Asian Affairs* 3: 7-16.
- Zhou, Baogen. 2010a. Cong duiwai jingmao shijiao kan ruhe tigong woguo yuanwai xiangmu de youxiaoxing [How to enhance the effectiveness of our foreign aid: a view from foreign development cooperation]. *Hongqi Wengao* [Red Flag Journal] No.19.
- . 2011b. Yuanwai daidong huli hezuo de liuda xiaoying [Six mutual benefit effects of foreign aid]. *Guoji Jingji Hezo* [International Economic Cooperation] No.9.
- Interview with Dr. Savit Bhotiwihok, Minister, Prime Minister's Office of Thailand, 9 November 1998.
- Hearing from the NESDB officials, 24 July 2013.

Abstract (in Japanese)

要約

本稿の目的は、援助受け入れ過程での「知識創造」に注目しつつ、いわゆる「新興ドナー」の新しい貢献の可能性を示唆することである。三つの仮説からなるモデルによって、援助受け入れ国の知識（形式知と暗黙知）創造過程を考察する。新たな知識は、第一に土着の知識と外来の（ドナーの）知識の間の相互作用によって、第二に、形式知と暗黙知の間の相互作用を通じて形成される。第三に、援助受け入れ国の新興ドナーとしての援助活動において、被援助経験が生んだ知識が重要な役割を持つ。国際援助社会では、技術協力をドナーからの「ベスト・プラクティスの移転」、つまり一方向への移転とする認識が有力であるが、本稿では、ドナーと援助受け入れ側との間の相互作用をモデルの中心に据える。上記の仮説の体系が、新興ドナーの活動の現実に関して、どれだけ plausible な（「理にかなった」「もっともらしい」）説明を与えうるかをチェックするために、三つの事例分析を行った。

中国の事例：1990年代前半に、呉儀対外経済貿易部長が、テクノクラートの論議を集約して、多様な対外経済政策手段を一体化する「大経貿戦略」を打ち出した。その後、日本の援助の研究を進めた中国の援助専門家が、通産省の「三位一体協力アプローチ」（援助、直接投資、輸出振興の有機的連携）に同様の政策思想を発見し、「大経貿戦略」と組み合わせて、「互惠・ウィンウィンの追求」を柱とする中国型の対外援助モデルにつなげた。アフリカを中心とした広い地域における中国の対外援助活動は、こうして形成された独自の「知」を基盤としている。

タイの事例：日本の援助によって1980年代に建設が進められた「東部臨海開発計画」は、タイ経済に重要な位置を占めているが、二か所の深海港と工業団地から構成される巨大インフラ事業が、着実に特段のスキャンダルなく完成した背景には、タイ固有の暗

黙知と日本からの形式知の活用があった。前者は、テクノクラートの間の激しい意見対立を利用した「タイ式チェック・アンド・バランス」であり、後者は、臨海工業地帯の建設に関する最先端の科学技術である。タイ政府は、「東部臨海開発計画」の暗黙知を‘形式知化’してミャンマー政府に提示し、同国南部の「ダウエー経済特別区」に対する支援を開始している。

「TVA モデル」の展開：終戦直後の日本の政策責任者の間に、TVA（テネシー渓谷開発公社）の経験に対する強い関心が生まれ、日本の河川総合開発への応用が企画された。この試みは不成功に終わったが、その一環として世界銀行融資の下に実施された「愛知用水事業」の経験は、日本の援助において重要な役割を果たした。代表例がインドネシアの「ブランタス河流域総合開発」である。援助に従事した日本人技術者たちは愛知用水に直接関与したわけではなかったが、愛知用水は彼らにとって「(マックス・ウェーバーの) 理念型」だった。彼等との長期の共同作業の中から、インドネシア人技術者のリーダーは「One River, One Plan, One Management」の概念を生み出した。これは、水資源管理に関する IWRM (アジア域内の国際機関) の基本理念となっている。愛知用水、「One River, One Plan, One Management」、IWRM が、いずれも TVA と同じ「統合」の概念を共有することを指摘したい。

上記の事例は、東アジアの国々が援助受け入れの過程で、ドナーとの相互作用を通じて新たな知識を創造し、想像された知識に基づいてみずからの援助活動を行った事例でもある。今後は、事例分析のを対象地域を拡大して「知識創造の連鎖」モデルの検証を進めたい。



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