

2010-E-7

**Regional Environmental Cooperation in East Asia: From Track 1
ODA to Track 1.5 Business Arrangement**

ODAIRA, Takeshi

PhD student, Graduate School of Asia-Pacific Studies, Waseda University
Asia Fellow (RA), Global Institute for Asian Regional Integration

February 2011

Abstract

The concept of East Asian Community is discussed in both political and academic circles much more often today than in the past. The need for international environmental cooperation is also claimed in the same circles. Therefore, it is meaningful to study the current status of regional environmental cooperation in East Asia, as the global frameworks of environmental cooperation such as UNFCCC have not developed to produce a universally effective means of protecting the environment. This logic is similar to that of FTA researchers and policymakers who tend to deal more with regional than global economic arrangements in the face of the lack of progress in the development of universal trade arrangements at the global level, such as through WTO negotiations. How is regional environmental cooperation developing in East Asia? This paper conducts a qualitative case analysis of verifiable official documents and press releases. The analysis illustrates that ad-hoc environmental cooperation promotes institutionalized formal cooperation, and the latter promotes the emergence of track 1.5 cooperation and eventually constitutes the multi-layered development of environmental cooperation frameworks as a whole in East Asia. The supported hypothesis is meaningful also because the governmental sector, which suffers from limited budget for environmental cooperation, has begun to take advantage of the driving force of the market-driven corporate sector, which drives the deepening economic integration of East Asia, and diversified the sources of the stimuli of the cooperation.

Keywords: Regional environmental cooperation, Track 1.5, ODA, East Asia

Index

Introduction

I. Literature Review: International Environmental Cooperation in East Asia

1. Theories on the development of regional environmental cooperation
2. Regional environmental cooperation in East Asia
3. Regional environmental cooperation in North East Asia
4. Regional environmental cooperation in South East Asia

II. Case 1: Japan-China Environmental Cooperation:

1. Ad-hoc track 1 cooperation
2. Institutionalized track 1 cooperation
3. Track 1.5 cooperation

III. Case 2: Japan-India Environmental Cooperation:

1. Ad-hoc track 1 cooperation
2. Institutionalized track 1 cooperation
3. Track 1.5 cooperation

IV. Case 3: Japan-ASEAN Environmental Cooperation:

1. Ad-hoc track 1 cooperation
2. Institutionalized track 1 cooperation
3. Track 1.5 cooperation

Conclusion: Track 1 to Track 1.5 Cooperation in East Asia

Introduction

Today, the concept of East Asian Community is discussed in both political and academic circles much more often than in the past. Besides, the need for international environmental cooperation is claimed by participants of the discussion. Therefore, it is meaningful to study the current status of regional environmental cooperation in East Asia, as global frameworks of environmental cooperation such as UNFCCC have not developed universally effective means of protecting the environment. This logic is similar to that of FTA researchers and policymakers who tend to deal more with regional than global economic arrangements in the face of slow progress in the development of universal trade arrangements at the global level such as through WTO negotiations.

How is regional environmental cooperation developing in East Asia? To this research question, a few researchers have given their answers. Kato claims that sub-regional environmental cooperation programs have been developed, though environmental regime has not developed yet in East Asia (2004: 325-352). Noguchi asserts that environmental cooperation involving non-state actors would determine environmental cooperation in East Asia in the near future (2007: 19-36). Matsuoka, Matsumoto and Iwamoto (2008) assume that track 1 environmental cooperation would lead to track 1.5 cooperation as a part of the first stage of the development of a regional environmental regime.

However, discussions on the prospect of environmental cooperation in East Asia are still controversial because most of them focus only on the formal level of cooperation. They do not empirically examine how this process in the first stage is proceeding in East Asia by focusing on the track 1.5 level of the cooperation. Therefore, it is necessary to conduct case studies to examine the validity of the claims of previous researches by focusing on the various levels of cooperation including the track 1.5 level. Through such case studies, a more critical and deeper empirical analysis on the prospect of East Asian regional environmental cooperation is possible. If case studies empirically show how the assumption that track 1 environmental cooperation is promoting the emergence of track 1.5 cooperation in East Asia, it also means to explain how a regional environmental regime has begun to develop in East Asia.

Accordingly, this paper illustrates how bilateral track 1 environmental cooperation such as ODA is leading to the emergence of track 1.5 cooperation involving the corporate sector in East Asia. To examine the thesis statement, this paper uses a qualitative case method to analyze verifiable official documents and press releases. The paper looks at three cases of environmental cooperation between Japan and China, Japan and India, and Japan and ASEAN. These countries and regional framework all participate in the East Asia Summit (EAS), and are known as participants of ASEAN+6 (ASEAN countries, China, Japan, South Korea, Australia, India and New Zealand). The three selected cases involve cooperation between developed and developing countries in the same regional framework of East Asia. Hence, a study on the combination of these three cases offers a relevant perspective on the environmental cooperation of the region.

I. Literature Review: International Environmental Cooperation in East Asia

The present literature on international environmental cooperation in East Asia consists of generic discussions on the theories of the development of regional environmental cooperation and analyses on regional environmental cooperation including East Asia and its sub-regions: North East Asia and South East Asia. By reviewing existing researches, it is revealed that the literature mostly evaluates the prospect of the regional environmental cooperation by empirically examining the status quo with a few theoretical arguments on preconditions for the development of regional environmental cooperation in East Asia and its sub-regions. However, none of the existing researches in the literature focuses on the course of the development of the environmental cooperation from the intergovernmental level on bilateral basis to the transnational level involving the corporate sector, which inevitably drives the virtual integration of regional economies in East Asia.

1. Theories on the development of regional environmental cooperation

There are basically three arguments of the theories on the development of East Asian regional environmental cooperation. Firstly, Matsuoka assumes that, in order to establish a regional environmental community, it is necessary to develop social capacity of the governmental, corporate and non-governmental civil society sectors for environmental management in each country, based on regional environmental cooperation, and hence to enhance regional integration to the level of establishing an institutionalized regional environmental regime and materialize regional environmental policy coordination so that regional actors can coordinate necessary measures to collectively address environmental issues (2009: 6).

Secondly, Haas analyzes the Regional Seas Programmes of UNEP (United Nations Environment Programme) and suggests five key factors to establish a regional environmental regime: 1) leadership of states, 2) participation of international institutions, 3) transnational networks of scientists and researchers, 4) participation of NGOs, and 5) attention from the civil society sector (1998a: 3). Lee (2002) also confirms this view of Haas.

Moreover, Hempel argues that it is necessary for the state governments to reallocate its authorities to regulate environmental issues to supranational entities and local communities in order to realize more effective environmental governance by stimulating these entities and communities to set and achieve higher goals of environmental policies (1996: 6).

2. Regional environmental cooperation in East Asia

Haas argues that the current status of environmental cooperation in East Asia lacks the aforementioned five key factors of establishing a regional environmental regime (1998b). Schreurs also argues that multilateral environmental cooperation in East Asia is insufficient to address various problems. She explains how and why regional environmental cooperation is far less developed in North East and South East Asia than in Europe. She attributes the cause of underdeveloped cooperation in East Asia including the two said sub-regions to factors related to the high heterogeneity of the levels of economic development among states in the regions (Schreurs 2009: 202-228). In the same negative manner, Matsuoka doubts the prospect of EANET (Acid Deposition Monitoring Network in East Asia) to become an institution of regional environmental cooperation, at least in a shorter term, due to the current status of its

development and reluctance of participating states to conclude treaties allowing EANET to have legally binding force for monitoring activities of the contracting parties (2009: 8-9).

Kimura argues that East Asian countries are vulnerable to the demand of developed countries in Europe and North America, to which they export most of their intermediate products, to adjust to environmental standards set by these developed countries. Thus, he claims that East Asian countries are less motivated to coordinate international environmental standards within their own region (Kimura 2006: 326-344). Mori also points out that Asian countries are less motivated in addressing transnational environmental problems than European and North American countries (2008: 57).

However, Noguchi analyzes multilateral and transnational environmental cooperation in East Asia and concludes that five key factors are sufficiently achieved in the region, while he also admits that the capability of international networks of NGOs in East Asia cannot outweigh that of state actors in managing environmental problems with professional knowledge. He also points out that local governments in the region interact to cooperate in addressing environment issues often without intergovernmental agreements at the state level (Noguchi 2007: 24-31). In the same positive manner, Mori emphasizes the impact of ODA in ameliorating pollutions in East Asia and asserts that the diversification of measures and donors of environmental cooperation is a key determinant of the development of regional environmental cooperation in East Asia (Mori 2005: 41-46).

3. Regional environmental cooperation in North East Asia

Some researchers equivocally define the region of East Asia and include the cases of environmental cooperation in North East Asia as those of North East Asia. Therefore, the literature review for East Asian regional environmental cooperation includes some key researches of North East Asian environmental cooperation.

Only a few researchers find that the current status of regional environmental cooperation in North East Asia has positive implication on its course of further development. Li, for instance, points out the similarity between the Baltic Sea area and North East Asia in terms of shared problems of their transnational pollution and the heterogeneity of the level of the economic development of countries within each region. He therefore argues that the development of regional marine environmental policy regime in North East Asia follow that of the Baltic Sea area (Li 2008: 90). Ogawa analyzes NOWPAP (Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region), a regional environmental cooperation project for marine environmental protection, and positively evaluates its prospect of further development, while he also implies that regional environmental cooperation in North East Asia is slow in its progress of development (Ogawa: 96-99).

Most researchers focus more on the negative implication of the current status of regional environmental cooperation in North East Asia. Lee (2002) negatively concludes that North East Asia lacks the necessary conditions of the institutionalization of regional environmental cooperation such as the networks of scientists and the initiatives of governments. Likewise, Takahashi, et al. systematically explain and analyze each initiative, agreement and project of intergovernmental, semi-formal and transnational environmental cooperation in North East Asia at bilateral and multilateral

levels (2010: 34-38). Based on empirical examination, they conclude that North East Asian countries including China, Japan and South Korea lack motivation to cooperatively sustain multilateral environmental projects among them. They point out that their positions are related to the lack of the coordination of environmental policies among them to address global environmental problems (Takahashi, et al. 2010: 40-41). Moreover, Nam (2002) suggests that the lack of consensus on the comprehension of the information related to the environment issues negatively contributes to the development of regional environmental cooperation in North East Asia. He also points out that the actions of non-state actors have limited impact on the development of regional environmental cooperation in North East Asia (Nam 2002).

4. Regional environmental cooperation in South East Asia

Some researchers also discuss East Asian environmental cooperation by incorporating cases of South East Asia. There are mixed views on the prospect of its status quo. Schreurs assumes that various conditions suggest regional environmental cooperation develops more in South East Asia than in North East Asia (2009: 202-228). However, in contrast, Ohno concludes that ASEAN secretariat and its member states have analytical capability to understand regional environmental problems but its tendency of consensus-driven decision making process hinders coordinated actions to address these problems (2008: 28).

The literature review reveals that discussions on the positive and negative prospects of East Asian regional environmental cooperation are still controversial among researchers. One of the reasons that they cannot conclude the discussion is the lack of their focus on the prospect of track 1.5 cooperation. Therefore, the following case studies include discussions on the track 1.5 level of East Asian environmental cooperation so that the research complements the lack of such focus of the existing researches to help concluding the discussions on the prospect of cooperation.

II. Case 1: Japan-China Environmental Cooperation

The following three case studies exhibit the development of regional environmental cooperation on bilateral basis in East Asia. They focus on the ad-hoc track 1, institutionalized and track 1.5 levels of cooperation so that they provide more critical assessment of the prospect of the development of East Asian regional environmental cooperation with empirical analyses. They will reveal multi-layered patterns of the development of environmental cooperation in the respective cases.

Firstly, the Japan-China environmental cooperation shows a multi-layered pattern of development from the track 1 ad-hoc level to the track 1.5 level of cooperation. Japan's yen loans to China as ad-hoc track 1 environmental cooperation between the two countries have developed to the level of institutionalized cooperation. Further, the two countries have expanded bilateral track 1.5 environmental cooperation by promoting bilateral environmental businesses.

1. Ad-hoc track 1 cooperation

As ad-hoc track 1 environmental cooperation between Japan and China, yen loans for China have been increasing environmental projects and area coverage in China since 1988.

The first yen loan (ODA) for environment improvement and antipollution measures was provided to China in 1988. This loan included environmental projects through infrastructure development such as water and gas supply and sewerage systems (Someno 2009: 68-69). In the same year, Japanese Prime Minister Takeshita proposed to establish “the Sino-Japanese Friendship Centre for Environmental Protection” when he visited China. This centre was established in 1996 with Japanese grant ODA (ten billion yen) and Chinese government budget (sixty-six million RMB). Its main functions were the research and development of environmental technologies including measurement and data processing methods, related policies and human resources (The Sino-Japanese Friendship Centre, 2010; Yamazaki 2009: 211-212, 213).

Japanese environmental yen loan for China has been increasing in volume and in variety. When the environmental yen loan for China began, it was targeted at air pollution and water quality improvement (Someno 2009: 69). In 2001, the aid included anti-desertification measures including forestation and public sanitation measures. The environmental yen loan represented 70 percent of all yen loan for China that year (Someno 2009: 68-69). In 2009, Japan’s environmental yen loan for China exceeded one trillion yen and 30 percent of the total yen loan for China and constituted most of Japanese ODA for China (Someno 2009: 68-69).

2. Institutionalized track 1 cooperation

Track 1 cooperation between China and Japan began to be institutionalized in 1994. Since then, track 1 environmental cooperation between the two countries has developed further. Moreover, in 2007, minister-level dialogue began to encourage track 1 environmental cooperation to develop into track 1.5 cooperation.

The two countries concluded the “Sino-Japanese Environmental Protection Agreement,” the first step in the institutionalization of track 1 cooperation, in 1994. This agreement set in motion information and academic exchanges between China and Japan regarding the prevention of global warming and air and water pollution, including acid rain, hazardous waste and sanitation problems. Based on this agreement, “Sino-Japanese Environmental Protection Joint Committee” was formed and had eight director-general level meetings from 1994 to 2008 (Yamazaki 2009: 212). Moreover, the first “Sino-Japanese Environmental Cooperation Forum” was held in 1996. This forum met four times between 1996 and 2002 and facilitated public and private dialogue of the two countries (Someno 2009: 67).

Japanese Prime Minister Hashimoto proposed the “Vision of the Sino-Japanese Environmental Cooperation toward 21st Century” when he visited China in 1997. This vision included plans for the “Sino-Japanese Vision of Model City of Environmental Development” (leading to a thirty billion yen loan agreement in 1998 for the reduction of the environmental burden of factories in three cities) and the “Establishment of Environmental Information Network” (resulting in a two hundred million yen grant agreement in 1998 to set up an environmental information sharing network involving one hundred Chinese cities) (Yamazaki 2009: 212). Accordingly, when then Chinese President Jiang Zemin visited Japan in 1998, the two countries issued a “Joint Statement on Sino-Japanese Environmental Cooperation toward 21st Century.” The statement

reviewed Sino-Japanese environmental cooperation in the 1990s and reaffirmed commitment to further cooperation. Following this statement the two countries agreed to hold a “Sino-Japanese Environmental Cooperation Forum,” which would involve track 1.5 bilateral environmental cooperation (Ministry of Foreign Affairs, Japan [hereafter MOFA] 1998b; Someno, K 2009: 67; Yamazaki 2009: 212, 214).

As track 1 environmental cooperation between China and Japan developed further, the two sides issued a “Joint Statement by Japan and the People's Republic of China on the Further Enhancement of Cooperation for Environmental Protection” when Chinese Premier Wen Jiabao visited Japan in April 2007. This statement reaffirmed the importance of environmental cooperation between the two countries envisaged in the ODA projects which had already been undertaken (Yamazaki 2009: 212).

Moreover, the two sides held the first “Policy Dialogue between Japanese and Chinese Energy Ministers” in Tokyo in 2007 to expand track 1 environmental cooperation into track 1.5 cooperation. The parties agreed on the following: 1) a basic framework and roadmap for “Sino-Japanese Environmental Business Model Projects” including candidate projects that could attract Japanese companies and an intergovernmental committee to prevent disputes on intellectual property rights; 2) a three-year plan for capacity building for three hundred Chinese government officials to help manage energy-efficiency policies; and 3) a joint research program on energy-efficiency policies to be conducted by two research institutes, the Institute of Energy Economics in Japan and the Energy Research Institute of the National Development and Reform Commission in China (Agency for Natural Resources and Energy [hereafter ANRE], Japan 2007a).

In 2008, when Chinese President Hu Jintao visited Japan, China and Japan released a “Joint Statement on Climate Change.” In this statement, the leaders of the two countries agreed to strengthen further bilateral environmental cooperation including technical exchange in renewable energy, clean coal and Carbon Capture and Storage (CCS) technologies (MOFA 2008b: 213).

3. Track 1.5 cooperation

The first bilateral meeting involving the business sector in track 1.5 environmental cooperation between China and Japan began in 2006. Subsequently, China and Japan has been expanding their bilateral track 1.5 environmental cooperation by developing a mechanism to promote environmental business contracts.

As the first bilateral meeting for track 1.5 environmental cooperation, “the Japan-China Business Alliance for Energy Conservation and Environmental Protection” was held in December 2006, with participants of 220 companies (Yamazaki 2009: 223). The second meeting, “Sino-Japanese Energy Efficiency/Environment Forum,” was held in 2007 and developed a mechanism to promote track 1.5 environmental cooperation. In this meeting, six environmental business contracts were concluded (Ministry of Economy, Trade and Industry, Japan [hereafter METI] 2007; Yamazaki 2009: 217-218). A memorandum on the implementation of “Sino-Japanese Environmental Business Model Projects” was also concluded between the two countries in 2007. Moreover, the Joint Committee on Model Projects selected five of the business contracts concluded during the second Forum as model projects. The projects included measures of the conflict prevention and resolution of intellectual property right issues (Yamazaki 2009: 219).

In December 2007, China and Japan agreed to expand their bilateral environmental business cooperation when Prime Minister Fukuda visited China. The two sides agreed to establish a “Sino-Japanese Environmental Technology Information Plaza” and a “Sino-Japanese Energy-Efficiency/Environmental Business Network” to help match up environmental business partners in the two countries (Yamazaki 2009: 212-213). In April 2008, the “Sino-Japanese Energy-Efficiency/Environmental Cooperation Consultation Service” began to operate ten offices in China, which were opened by the Japan External Trade Organization (JETRO), the New Energy and Industrial Technology Development Organization (NEDO; an organization under the Ministry of Economy, Trade and Industry, Japan) and the Japan-China Economic Association. These offices were assigned to collect inquiries from Chinese companies and relay them to Japanese companies which could meet technical requirements by Chinese counterparts so that they could efficiently conclude environmental business contracts (METI 2008c).

The number of environmental business contracts concluded through the Sino-Japanese track 1.5 cooperation framework has increased year by year. The third “Sino-Japanese Energy Efficiency/Environment Forum” was held in 2008, resulting in the conclusion of fifteen environmental business contracts. The contracts included environmental investment and joint ventures in water membrane filtering, the recycling of industrial waste, the improvement of water quality in rivers and lakes, and energy efficiency in factories and offices (METI 2008a; Yamazaki 2009: 209). The fourth “Sino-Japanese Energy Efficiency/Environment Forum,” which took place in 2009 resulted in twenty-two environmental business contracts. They included emission reduction, eco-city development, water filtering, industrial and household waste recycling, industrial environmental assessment and energy efficiency improvement such as ESCO and joint ventures in eco-friendly products. Different from the previous three forums, the project sites of the agreed contracts in the fourth forum were located not only in coastal areas, but also in inland areas of China (METI 2008b). This shows the geographical expansion of track 1.5 environmental cooperation between Japan and China.

III. Case 2: Japan-India Environmental Cooperation

As is the case with China and Japan, Japan-India environmental cooperation shows a similar multi-layered pattern of development from the ad-hoc track 1 environmental cooperation to the track 1.5 level of cooperation. India and Japan have developed their ad-hoc track 1 environmental cooperation through yen loans for India to the level of institutionalization. Track 1.5 environmental cooperation between the two countries has been expanded through track 1.5 forums for business promotion.

1. Ad-hoc track 1 cooperation

India and Japan agreed in 1989 on the first priority area of environmental ODA in favor of farmers in India, who constituted the majority of the population of India at that time, marking the first ad-hoc track 1 environmental cooperation between the two countries. As environmental yen loans for India covered more and more categories, Japan designated a basic policy of ODA for India in 2006.

In February 1989, the two countries agreed that Japanese ODA must prioritize environmental protection especially in the forestry sector to protect the living environment of farmers in India (MOFA 1989: 153). Accordingly, environmental yen loans for India began in the same year. The first projects dealt with environmental land use planning and the recycling of industrial waste (MOFA 1990: 167). Also, as agreed in 1989, yen loans for India provided the first reforestation project in 1990 (MOFA 1991: 170).

In the following years, environmental yen loans for India expanded their areas of coverage. Japan provided environmental yen loans to construct water supply and sewage systems in India for the first time in 1992 (MOFA 1993: 180; 1995: 192). In January 1993, Japan and India agreed that Japanese yen loans should focus on cooperation in antipollution measures (MOFA 1993: 176). In March 1995, Japan selected the five priority areas of concern in environmental protection projects: 1) antipollution; 2) water quality improvement; 3) water supply; 4) forestation; and 5) the improvement of sanitary condition (MOFA 1995: 188). Japan prioritized sewage system construction and reforestation in order to address environmental problems in the rapidly growing India (MOFA 2005a: 138, 139).

In May 2006, Japan drew up a new “ODA Plan for India.” This new plan designated the areas of concern in environmental yen loan projects, including the construction of water supply and sewage systems, forestation, the installation of renewable energy facilities and the improvement of energy efficiency and sanitary conditions in urban areas (MOFA 2007a: 135-136). As indicated in the new plan, Japanese yen loans were extended for the first time for capacity-building in the management of reforestation in 2008 (MOFA 2009d; 2009b: 2).

In 2009, Japan’s environmental yen loans for India reached almost six hundred billion yen, representing 90 percent of total yen loans for India, which in turn constituted most of Japanese ODA to India. Most of the implemented projects were related to reforestation, water supply, water environment, sewage systems and industrial waste management.¹

2. Institutionalized track 1 cooperation

India and Japan agreed to institutionalize track 1 environmental cooperation for the first time in 2006. The two joint statements between the prime ministers of the two countries in 2007 strengthened bilateral environmental cooperation and opened a way to the development of the subsequent track 1.5 cooperation between the two countries.

When Indian Prime Minister Singh visited Japan in 2006, the two countries issued the “Joint Statement: Towards Japan-India Strategic and Global Partnership.” The two sides agreed to establish “Inter-Governmental Consultations on Environment and Climate Change.” They also agreed to cooperate within the framework of “Asia-Pacific Partnership on Clean Development and Climate (MOFA 2006c).”

The first meeting of a “Japan-India Energy Dialogue” was held in Tokyo in April 2007. In this first meeting, ministers of the two countries issued a joint statement

¹ For the long-term trend of the implemented projects in India, see MOFA 1990: 167; 1991: 170; 1992: 173; 1993: 180; 1995: 192; 1996: 165; 1997: 180; 1998a: 170; 2001: 168, 169; 2004: 129, 131; 2005a: 141, 143; 2006a: 138; 2007a: 139; 2008a: 141, 142; 2009a: 139-140; 2009b: 2; and 2009d.

confirming their commitment to bilateral cooperation in the energy sector and set up five working groups to develop joint projects including for renewable energy, clean coal and energy efficiency. They also agreed to exchange experts and implement the capacity building measures. In addition to bilateral environmental cooperation, the two countries expressed their willingness to cooperate in multilateral settings such as the Asia-Pacific Partnership on Clean Development and Climate (APP) and the Five Country Energy Ministers Meeting (MOFA 2006b; ANRE 2007c; Kutani, Yagi & Motokura 2009: 69).² In July 2007, the second meeting of the “Japan-India Energy Dialogue” was held in India. In this meeting, ministers of the two countries agreed on environmental pilot programs such as energy audit, renewable energy and supercritical coal-fired power generation (ANRE 2007b; Kutani, Yagi & Motokura 2009: 69).

In August, 2007, Japanese Prime Minister Abe and his Indian counterpart released a “Joint Statement on the Roadmap for New Dimensions to the Strategic and Global Partnership between Japan and India” and a “Joint Statement on the Enhancement of Cooperation on Environmental Protection and Energy Security” when the Japanese leader visited India with an entourage of more than two hundred people including business leaders. In these joint statements, the two leaders agreed to annually hold a ministerial-level energy dialogue. They also agreed on specific environmental corporation programs, including the capacity building of trainers and engineers, the information dissemination and demonstration of technologies related to energy efficiency, renewable energy and bio-fuels such as bio-ethanol. They agreed further to promote public-private environmental cooperation (MOFA 2007m; 2007l). Accordingly, in September, 2008, the third meeting of the “Japan-India Energy Dialogue” was held in Tokyo, where both sides agreed on business and technical-exchange programs on energy-efficiency for enterprises of various sizes, renewable energy and establishing Energy Efficiency Centres in India. India also expressed its plan to hold a business-matching workshop in India to promote the transfer of environmental technologies from Japan to India (ANRE 2008; Kutani, Yagi & Motokura 2009: 69).

3. Track 1.5 cooperation

Track 1.5 environmental cooperation between India and Japan began in 2006. Track 1.5 forums have been expanding environmental cooperation in the business sector by promoting more and more contracts.

In December 2006, the first “India-Japan Energy Forum” was held in India. It was organized by NEDO and the Energy and Resources Institute (an influential Indian environmental research institute) and attended by three hundred participants including vice ministers and other senior government officials, representatives of research institutes and major companies of both countries. Participants of the forum shared knowledge on clean coal technology including in the fields of coal, oil and gas and energy efficiency (Tsuji, Kaneko & Nakajima 2007: 42-49).

The third “India-Japan Energy Forum,” held in India in February, 2010, expanded further the track 1.5 environmental cooperation between India and Japan. More than three hundred participants attended, including government officials, representatives of

² China, India, Japan, the Republic of Korea and the United States have been participating the Five Country Energy Ministers Meeting to discuss energy security and the stabilization of oil market since 2006.

research institutes, business associations and companies of the two countries. They discussed bilateral business cooperation in environmental technologies such as energy efficiency and renewable energy. Japanese participants advertised their environmental technologies to win contracts with Indian counterparts in this forum (The Energy and Resources Institute 2010).

IV. Case 3: Japan-ASEAN Environmental Cooperation

As in the preceding two cases, Japan-ASEAN environmental cooperation develops from the ad-hoc track 1 level toward the direction of the track 1.5 level. With ad-hoc track 1 cooperation at hand, ASEAN countries and Japan have reached the level of institutionalization. It is also revealed that Japan and ASEAN have acknowledged the importance of promoting track 1.5 cooperation in the environmental field.

1. Ad-hoc track 1 cooperation

Ad-hoc track 1 cooperation between ASEAN countries and Japan began in 1974. Yen loan projects in the Philippines and Indonesia often included the pioneer cases of environmental projects.

In 1974, an environmental yen loan for ASEAN member countries provided the first project since the formation of ASEAN. It was a project to construct a water supply system in Indonesia (MOFA 2009f). From the 1980s on, most of the environmental yen loan projects for ASEAN were implemented in the Philippines and Indonesia. In 1983, environmental yen loans for ASEAN member countries provided the first project to construct geothermal power plants in the Philippines (MOFA 2009h). Subsequent yen loans were used for reforestation in the Philippines in 1988 (MOFA 2009h), waste management in Indonesia and consultation to reduce the environmentally negative effect of economic activities in the Philippines in 1990 (MOFA 2009f; 2009h), assistance for environmental research institutes in Indonesia in 1991 (MOFA 2009i), the improvement of the quality of urban sewage systems in Indonesia (MOFA 2007b), that of the environmental effect of the operation of fire thermal electric power plants in the Philippines (MOFA 2007b), and assistance for an environment protection fund in Thailand in 1992 (MOFA 2007b). Yen loans were also extended for environmental impact assessment in Indonesia in 1994 (MOFA 2007b) and for providing power plants with environmental measurement equipment in the Philippines (MOFA 2007c), for the construction of wind power generators and maritime anti-pollution measures in the Philippines in 2001 (MOFA 2010b) and for measures to prevent global climate change in Indonesia in 2009 (MOFA 2010d).

Japan's yen loan programs for environmental projects in the ten members of ASEAN between 1967 and 2009 totaled almost twelve trillion yen, about 7 percent of Japan's total yen loans for ASEAN 10. Most of these projects were related to water supply, water quality improvement and sewage system in urban areas. Other environmental projects were related to climate change, renewable energy such as geothermal and wind power, environmental researches, resource management and forestation.³

³ For the long-term trend of the implemented projects in ASEAN countries, see MOFA

2. Institutionalized track 1 cooperation

The institutionalization of track 1 environmental cooperation between ASEAN and Japan began in 2003 and gained its momentum in 2007.

In December 2003, the two sides held a commemorative summit in Tokyo and released a “Tokyo Declaration for the Dynamic and Enduring Japan-ASEAN Partnership in the New Millennium.” In this declaration, the two sides designated action plans on cooperation against environmental problems such as haze pollution, forest fire prevention, forest management and urban sewage system. They also agreed on cooperation in information dissemination on environmental issues, the exchange of environmental technologies, monitoring and the database of environmental issues and administrative capacity building for eco-city administration (Ministry of Environment, Japan [hereafter MOE] 2005: 61). In 2005, ASEAN and Japan held the ninth “ASEAN-Japan Summit” in Malaysia and agreed to strengthen bilateral cooperation in energy efficiency and renewable energy such as bio-fuel and hydroelectric power (MOFA 2005b).

The Institutionalization of track 1 environmental cooperation between ASEAN and Japan went further in 2007. In November Japanese Prime Minister Fukuda proposed the idea of the “ASEAN-Japan Dialogue on Environmental Cooperation” at the eleventh ASEAN-Japan summit in Singapore. This dialogue was aimed at discussing concrete measures for ASEAN-Japan environmental cooperation (MOFA 2009c). In March 2008, the first “ASEAN-Japan Dialogue on Environmental Cooperation” was held in Vietnam. The two sides discussed the priority areas of environmental cooperation projects (MOFA 2009c). Accordingly, in 2009, the Japan-ASEAN Integration Fund (JAIF) decided to fund two environmental cooperation projects proposed at the “ASEAN-Japan Dialogue on Environmental Cooperation (MOE 2009: 10).”

3. Track 1.5 cooperation

Although Japan and ASEAN have not established track 1.5 cooperation in environmental business, they seem to be moving in that direction.

Japan-ASEAN environmental cooperation has not reached the level of track 1.5 cooperation. However, the two sides acknowledged the importance of promoting environmental business relationships between Japan and ASEAN. In June 2000, the first “SOME-MITI Consultations” between the ASEAN Senior Officials Meeting on Energy and MITI (the Ministry of International Trade and Industry, predecessor of the Ministry of Economy, Trade and Industry [METI]) of Japan was held. The two sides adopted the “SOME-MITI Energy Work Program” for the years of 2000 and 2001. As early as in 2000, this program encouraged the development of bilateral business contracts in the areas of energy efficiency and renewable energy. Moreover, this program acknowledged the importance of developing mechanisms to encourage the corporate entities of the two sides to invest more on energy efficiency and renewable energy businesses in the

2007b; 2007c; 2007d; 2007d; 2007e; 2007f; 2007g; 2007h; 2007i; 2007j; 2007k; 2007n; 2007o; 2007p; 2007q; 2007r; 2007s; 2009e; 2009f; 2009g; 2009h; 2009i; 2009j; 2009k; 2009l; 2009m; 2009n; 2009o; 2009p; 2009q; 2009r; 2009s; 2009t; 2009u; 2009v; 2009w; 2009x; 2009y; 200z; 2009za; 2010a; 2010b; 2010c; and 2010d.

following years (ASEAN Centre for Energy 2008: 1-2).

Conclusion: Track 1 to Track 1.5 Cooperation in East Asia

In sum, in East Asia, track 1 bilateral environmental cooperation is evolving into track 1.5 bilateral environmental cooperation through the stage of institutionalized track 1 cooperation. In all three cases we have examined, yen loans for ad-hoc track 1 environmental cooperation developed to the level of institutionalized track 1 cooperation. Moreover, in the two cases of Japan-China and Japan-India relations, bilateral environmental cooperation developed beyond the level of track 1 institutionalization and reached the level of track 1.5 cooperation involving environmental business relationships.

This study has revealed how bilateral environmental cooperation has been developing in East Asia from the track 1 to the track 1.5 level. Case studies empirically support the assumption that track 1 environmental cooperation is promoting track 1.5 cooperation in East Asia. This is because it is revealed that ad-hoc environmental cooperation promotes institutionalized formal cooperation, and the latter promotes the emergence of track 1.5 cooperation and eventually constitutes a multi-layered development of environmental cooperation frameworks as a whole in East Asia. A regional environmental regime has begun to emerge at least at institutionalized official level and at most at half-private and half-official level in East Asia.

By this research, it is also revealed that regional environmental cooperation has developed deeper into more sustainable forms in which more diversified actors such as corporate entities are getting involved in East Asia at least at bilateral basis. As some previous researches such as that of Hempel imply in the literature review, the diversification of actors involved in regional environmental cooperation is necessary for its further development. Hence, the supported hypothesis of the research is meaningful also because the position of the governmental sector, which suffers from the shortage of the limited budget for environmental cooperation, has been shifted to take advantage of the driving force of the market-driven corporate sector, which drives the deepening economic integration of East Asia, and to stimulate it to participate in the regional environmental cooperation so that regional environmental cooperation develops with diversified stimuli.

The conclusion of the research complements the lack of the focus of the existing researches on the track 1.5 level of environmental cooperation in East Asia. Through the case studies containing analyses on the 1.5 level, it is now much clearer that the prospect of regional environmental cooperation in the region is rather positive than negative. Although the institutionalization of the regional environmental cooperation is still limited, the track 1.5 level of environmental cooperation has prospective driving force to sustain and promote the further development of environmental cooperation in the region.

In addition, as a practical implication, the result of the study poses a new question of how half-private environmental cooperation involving both the governmental and business sectors is going to develop. A possible dichotomy of answers to this question is which type of framework environmental regime is going to take in East Asia. In order to give sufficient clues to answer the question, it is necessary to wait for the further

accumulation of analyses on the course of the development of ongoing environmental cooperation in East Asia.

Besides, the study has a limitation. The number of cases examined is too limited to offer the pattern revealed as generally applicable to environmental cooperation in the world. It is necessary, therefore, to conduct more comparable case studies of bilateral environmental cooperation.

References

- ASEAN Centre for Energy 2008, 'Summary Record of the First SOME-MITI Consultations', Aug. 25, accessed Mar. 15, 2010, pp. 1-2.
<<http://www.aseanenergy.org/download/reports/some-meti/Summary%20Record%20of%20the%201st%20SOME-METI%20Consultations.pdf>>.
- Agency for Natural Resources and Energy, Japan 2007a, 'A Joint Statement by the Japanese Ministry of Economy, Trade and Industry and the People's Republic of China's National Development and Reform Commission on Enhancement of Cooperation between Japan and the People's Republic of China in the Energy Field', Apr., accessed on Mar. 9, 2010.
<<http://www.enecho.meti.go.jp/policy/international-affairs/data/Joint%20Statement.pdf>>.
- 2007b, 'Joint Statement between the Ministry of Economy, Trade and Industry of Japan and the Planning Commission of India on the Occasion of the Second Meeting of the Japan-India Energy Dialogue', Jul., accessed Mar. 9, 2010.
<http://www.enecho.meti.go.jp/policy/international-affairs/data/Joint%20statement_ji.pdf>.
- 2007c, 'Joint Statement between The Ministry of Economy, Trade and Industry of Japan and The Planning Commission of India on the launch of the Japan-India Energy Dialogue', Apr., accessed Mar. 9, 2010.
<http://www.enecho.meti.go.jp/policy/international-affairs/data/Japan%20Ver._Final%20draft-Energy%20Dialogue.pdf>.
- 2008, 'Joint Statement between the Ministry of Economy, Trade and Industry of Japan and the Planning Commission of India on the Occasion of the Third Meeting of the Japan-India Energy Dialogue', Sep., accessed Mar. 9, 2010.
<<http://www.enecho.meti.go.jp/policy/international-affairs/data/20080917en.pdf>>.
- Haas, P 1998a, 'Prospect for effective Marine Governance in the North East Pacific Region', Conference Paper of an ESENA Workshop : Energy-Related Marine Issues in the Sea of Japan, Tokyo, July 11-12, January 12, 2010.
<http://www.nautilus.org/publications/essays/napsnet/forum/security/HaasESENA2.PDF/at_download/file>.
- 1998b, 'Prospects for Effective Marine Governance in Northwest Pacific Region', Paper presented at ESENA Workshop: Energy-related Marine Issues in the Sea of Japan, Tokyo, July 11-12, cited in Choi, YH 2001, 'Cooperative Environmental Efforts in East Asia: NGO Perspective', *Proceedings of the Korea Association for Public Administration Conference*, no. 1, Korea Institute of Administration, p. 407.
- Hempel, L 1996, *Environmental Governance: The Global Challenge*, Island Press, Washington, D.C..
- Kato, H 2004, 'An Introduction to Regional Environmental Regimes in Asia and the Pacific: The Present State and Future Prospects', *Nagoya University Journal of Law and Politics*, vol. 202, pp. 325-352.
- Kimura, F 2006, 'International Production and Distribution Networks in East Asia: Eighteen Facts, Mechanics, and Policy Implications', *Asian Economic Policy Review*, vol. 1, iss. 2, pp. 326-344.

- Kutani, I, Yagi, T & Motokura, M 2009, 'India's Energy Situation and Trends in New/Renewable Energy and Energy Conservation Policies', The 45th Research Session, Strategy and Industry Research Unit, The Institute of Energy Economics, Japan, Sep. 14, accessed on Mar. 9, 2010. <<http://eneken.ieej.or.jp/data/2854.pdf>>.
- Lee, SW 2002, 'Building Environmental Regimes in Northeast Asia: Progress, Limitations, and Policy Options', in P Harris (ed.), *International Environmental Cooperation: Politics and Diplomacy in Pacific Asia*, University Press of Colorado, Boulder (Colorado).
- Li, GZ 2008, 'Japan and Chinese Environmental Cooperation: Toward to Establish the Northeast Asian Environmental Community', *Bulletin of Hokuriku University*, vol. 32.
- Matsuoka, S 2009, 'Nihon - no - Kokusai - Kankyo - Kyoryoku - toh - Higashi - Asia - Kyodotai (Japan's International Environmental Cooperation and East Asian Community)', *Waseda Asia Review*, no. 5.
- , Matsumoto, R & Iwamoto, H 2008, 'Higashi - ajia - niokeru - chiiki - togo - toh - 'Kankyo-kyodotai': higashi - ajia - sanseiuh - monitaringu - nettowaaku (EANET) toh-chokyori-ekkyo-osenn-joyaku (LRTAP) tonohikaku (Regional Integration in East Asia and "Environmental Community": Comparative Analysis of the Acid Deposition Monitoring Network in East Asia [EANET] and Convention on Long-range Trans-boundary Air Pollution [LRTAP])', *Kankyo - keizai / seisaku - gakkai 2008 nenn - taikai(Report of the 2008 Annual Conference of the Society for Environmental Economics and Policy Studies)*, CD, Osaka University, Sep. 27, 2008.
- Ministry of Economy, Trade and Industry, Japan 2007, 'Dai - ni - kai - nicchuu - shohene - kankyo - sougou - fohram - niokeru - nicchuukan - noh - kyoryoku - goijiko - nitsuite (Implementation of the Agreement Concluded at the 2nd Japan-China Energy Conservation Forum)', news release, Sep. 27, accessed Dec. 2, 2009. <<http://www.meti.go.jp/press/20070927002/F.pdf>>.
- 2008a, 'Dai - san - kai - nicchuu - shohene - kankyo - sougou - fohram - niokeru - nicchuukan - noh - kyoryoku - goijiko - nitsuite (Implementation of the Agreement Concluded at the 3rd Japan-China Energy Conservation Forum)', news release, Nov. 28, accessed Dec. 2, 2009. <<http://www.meti.go.jp/press/20081128001/20081128001.pdf>>.
- 2008b, 'Dai - yon - kai - nicchuu - shohene - kankyo - sougou - fohram - niokeru - nicchuukan - noh - kyoryoku - goijiko - nitsuite (Implementation of the Agreement concluded at the 4th Japan-China Energy Conservation Forum)', news release, Nov. 8, accessed Dec. 2, 2009. <<http://www.meti.go.jp/press/20091108001/20091108001.pdf>>.
- 2008c, "'nicchuu - shoene - kankyo - kyoryoku - sodan - madoguchi' no - gyomukaishi - nitsuite (Regarding the Start of Operation at the Consultation Service Offices for Japan-China Energy Conservation and Environmental Cooperation)', news release, Mar. 28, accessed Dec. 2, 2009. <http://www.meti.go.jp/press/20080328011/01_press.pdf>.
- Ministry of Environment, Japan 2005, 'III. Kokusai - kankyo - kyoryoku - noh - genjo - to - kadai (III. Status and Problems of International Environmental Cooperation)', Feb. 1, accessed Mar. 15, 2010, p. 61.

- <<http://www.env.go.jp/earth/report/h16-07/03-1.pdf>>.
- 2009, 'Juutenbunya (kokusaibunya) nikakaru - omona - torikumijokyo - nado: Siryo 2-1 (Major Progress at Important Areas (International): Material 2-1)', Aug. 5, accessed Mar. 15, 2010, p. 10.
<http://www.env.go.jp/council/02policy/y027-08/mat02_1.pdf>.
- Ministry of Foreign Affairs, Japan 1989, *Wagakuni - noh - Seifukaihatsuenjo - gekan - kunibetsu - jisseki 1989 (Japan's Official Development Aid 1989: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1990, *Wagakuni - noh - Seifukaihatsuenjo - gekan - kunibetsu - jisseki 1990 (Japan's Official Development Aid 1990: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1991, *Wagakuni - noh - Seifukaihatsuenjo - gekan - kunibetsu - jisseki 1991 (Japan's Official Development Aid 1991: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1992, *Wagakuni - noh - Seifukaihatsuenjo - gekan (Kunibetsu - jisseki) 1992 (Japan's Official Development Aid 1992: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1993, *Wagakuni - noh - Seifukaihatsuenjo - gekan (Kunibetsu - enjo) 1993 (Japan's Official Development Aid 1993: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1995, *Wagakuni - noh - Seifukaihatsuenjo - ODA - hakusho - gekan (Kunibetsu - enjo) 1995 (Japan's Official Development Aid [ODA White Paper] 1995: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1996, *Wagakuni - noh - Seifukaihatsuenjo - ODA - hakusho - gekan (Kunibetsu - enjo) 1996 (Japan's Official Development Aid [ODA White Paper] 1996: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1997, *Wagakuni - noh - Seifukaihatsuenjo - ODA - hakusho - gekan (Kunibetsu - enjo) 1997 (Japan's Official Development Aid [ODA White Paper] 1997: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1998a, *Wagakuni - noh - Seifukaihatsuenjo - ODA - hakusho - gekan (Kunibetsu - enjo) 1998 (Japan's Official Development Aid [ODA White Paper] 1998: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 1998b, 'Nihonkoku - seifu - oyobi - chuukajinminkyowakoku - seifu - niyuru - nijuisseiki - nih - muketa - kankyokyoryoku - ni - kansuru - kyodohappyo (Joint Statement of the Government of Japan and the Government of the People's Republic of China on the Environmental Cooperation in the 21st Century)', Nov., accessed Dec. 2, 2009.
<http://www.mofa.go.jp/mofaj/kaidan/yojin/arc_98/c_kankyo.html>.
- 2001, *Wagakuni - noh - Seifukaihatsuenjo - ODA - hakusho-gekan (Kunibetsu - enjo) 2000 (Japan's Official Development Aid [ODA White Paper] 2000: Volume 2 [Country-by-Country Basis])*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2004, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2002 (Country-by-Country*

- Basis Data Book of Japan's Official Development Aid [ODA] 2002*), Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2005a, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2004* (*Country-by-Country Basis Data Book of Japan's Official Development Aid [ODA] 2004*), Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2005b, 'Joint Statement of the Ninth ASEAN-Japan Summit: Deepening and Broadening of ASEAN-Japan Strategic Partnership', May 11, accessed Mar. 15, 2010.
<<http://www.mofa.go.jp/region/asia-paci/asean/conference/joint0512.html>>.
- 2006a, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2005* (*Country-by-Country Basis Data Book of Japan's Official Development Aid [ODA] 2005*), Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2006b, 'Joint Statement of Energy Ministers of China, India, Japan, Republic of Korea and the United States', Dec. 16, accessed Jun. 4, 2010.
<<http://www.mofa.go.jp/policy/economy/energy/joint0612.html>>.
- 2006c, 'Joint Statement: Towards Japan-India Strategic and Global Partnership', Dec., accessed Dec. 2, 2009.
<<http://www.mofa.go.jp/region/asia-paci/india/pdfs/joint0612.pdf>>.
- 2007a, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2006* (*Country-by-Country Basis Data Book of Japan's Official Development Aid [ODA] 2006*), Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2007b, '(3) Nendo - betsu / keitai - betsu - jisseki - 02 ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis - 02)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_d/h_D0006_01.html>.
- 2007c, '(3) Nendo - betsu / keitai - betsu - jisseki - 02 ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis - 02)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_j/h_J0005_01.html>.
- 2007d, '(3) Nendobetsu / keitaibetsu - jisseki ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_k/h_K0005.html>.
- 2007e, '(3) Nendobetsu / keitaibetsu - jisseki ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_l/h_L0005.html>.
- 2007f, '(3) Nendobetsu / keitaibetsu - jisseki - 2 ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis - 2)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_e/h_E0005_01.html>.
- 2007g, '(3) Nendobetsu / keitaibetsu - jisseki - 2 ([3] ODA Achievement based on

- Fiscal Year-by-Year basis and Country-by-Country Basis - 2)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_f/h_F0005_01.html>.
- 2007h, '(3) Nendobetsu / keitaibetsu - jisseki - 2 ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis - 2)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_g/h_G0005_01.html>.
- 2007i, '(3) Nendobetsu / keitaibetsu - jisseki - 2 ([3] ODA Achievement based on Fiscal Year-by-Year basis and Country-by-Country Basis - 2)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/02_databook/eaj/h_eaj/h_n/h_N0005_01.html>.
- 2007j, 'Cambodia - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Cambodia: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/04_databook/01_e_asia/e_asia_02/e_asia_02_t08.html>.
- 2007k, 'Hyo - hachi - wagakuni - noh - nendobetsu / keitaibetsu - jisseki - shousai (Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/04_databook/01_e_asia/e_asia_01/e_asia_01_t08.html>.
- 2007l, 'Joint Statement On the Roadmap for New Dimensions to the Strategic and Global Partnership between Japan and India', Aug., accessed Dec. 2, 2009.
<<http://www.mofa.go.jp/region/asia-paci/pmv0708/joint-2.html>>.
- 2007m, 'Joint Statement by Japan and the Republic of India on the Enhancement of Cooperation on Environmental Protection and Energy Security', Aug., accessed Dec. 2, 2009. <<http://www.mofa.go.jp/region/asia-paci/pmv0708/joint-3.html>>.
- 2007n, 'Laos - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Laos: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/04_databook/01_e_asia/e_asia_11/e_asia_11_t08.html>.
- 2007o, 'Malaysia - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Malaysia: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryokuni/04_databook/01_e_asia/e_asia_08/e_asia_08_t08.html>.
- 2007p, 'Myanmar - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Myanmar: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.

- <http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/04_databook/01_e_asia/e_asia_09/e_asia_09_t08.html>.
- 2007q, 'Philippines - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (The Philippines: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/04_databook/01_e_asia/e_asia_06/e_asia_06_t08.html>.
- 2007r, 'Thai - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Thailand: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/04_databook/01_e_asia/e_asia_03/e_asia_03_t08.html>.
- 2007s, 'Vietnam - hyo - 8: wagakuni - noh - nendobetsu / keitaibetsu - jissekishosai (Vietnam: Chart 8: Detailed Achievement of Japan's ODA based on Fiscal Year-by-Year basis and Country-by-Country Basis)', Dec. 3, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/04_databook/01_e_asia/e_asia_07/e_asia_07_t08.html>.
- 2008a, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2007 (Country-by-Country Basis Data Book of Japan's Official Development Aid [ODA] 2007)*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2008b, 'Nihonkoku - seifu - toh - chuukajinminkyowakoku - seifu - tohnoh - kikohendo - ni - kansuru - kyodoseimei (Joint Statement of the Government of Japan and the Government of the People's Republic of China on Climate Change)', May, accessed Dec. 2, 2009.
<http://www.mofa.go.jp/mofaj/area/china/0805_ks.html>.
- 2009a, *Seifukaihatsuenjo (ODA) Kunibetsu - deitabukku 2008 (Country-by-Country Basis Data Book of Japan's Official Development Aid [ODA] 2008)*, Kokusai - kyoryoku - suishin - kyokai, Tokyo.
- 2009b, 'Kusanone / Ningen - noh - anzenhosho - mushoshikinkyoryoku - yakusokubibetsu - heisei - niju - nenndo (Grass-Root and Human Security Grant Aid: Contract Date Basis: 2008)', May 8, accessed Mar. 10, 2010: p. 2.
<http://www.mofa.go.jp/mofaj/gaiko/oda/data/zyoukyou/h20/pdfs/gctb_0809.pdf>.
- 2009c, 'Nichi - asean - shuyokyoryokujigyo (Major Japan-ASEAN Cooperative Projects)', Apr. 16, accessed Mar. 13, 2010.
<http://www.mofa.go.jp/mofaj/area/asean/j_asean/ja_skj_03.html#06>.
- 2009d, 'Nihon - noh - ODA - purojekuto - Indo (Japan's ODA Projects: India)', Oct. 27, accessed Mar. 10, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/data/gaiyou/odaproject/asia/india/contents_02.html>.
- 2009e, 'Nihon - noh - ODA - purojekuto: Thai - oukoku (Japan's ODA Projects: Kingdom of Thailand)', Dec. 4, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/data/gaiyou/odaproject/asia/thailand/contents_02.html>.

- 2009f, 'ODA: Indonesia', May 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryojisseki/kunij_90sbefore/901-01.htm>.
- 2009g, 'ODA: Malaysia', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryojisseki/kunij_90sbefore/901-10.htm>.
- 2009h, 'ODA: Philippines', May 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryojisseki/kunij_90sbefore/901-08.htm>.
- 2009i, 'ODA: Singapore', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryojisseki/kunij_90sbefore/901-05.htm>.
- 2009j, 'ODA: Thai', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryojisseki/kunij_90sbefore/901-06.htm>.
- 2009k, 'ODA: [11] Myanmar', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-11.htm>.
- 2009l, 'ODA: [1] Indonesia', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-01.htm>.
- 2009m, 'ODA: [2] Vietnam', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-02.htm>.
- 2009n, 'ODA: [4] Cambodia', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-04.htm>.
- 2009o, 'ODA: [5] Singapore', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-05.htm>.
- 2009p, 'ODA: [6] Thai', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-06.htm>.
- 2009q, 'ODA: [8] the Philippines', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-08.htm>.
- 2009r, 'ODA: [9] Brunei', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-09.htm>.
- 2009s, '[11] Laos', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryokuni/08_databook/pdfs/01-11.pdf>.
- 2009t, '[13] Laos', Mar. 31, accessed Mar. 16, 2010.
<http://www.mofa.go.jp/mofaj/gaiko/oda/shiryojisseki/kunij_99/g1-13.htm>.
- 2009u, '[1] Indonesia', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryokuni/08_databook/pdfs/01-01.pdf>.
- 2009v, '[2] Cambodia', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryokuni/08_databook/pdfs/01-02.pdf>.
- 2009w, '[3] Thai', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryokuni/08_databook/pdfs/01-03.pdf>.
- 2009x, '[6] the Philippines', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryokuni/08_databook/pdfs/01-06.pdf>.

- 1-06.pdf>.
- 2009y, '[7] Vietnam', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryo/kuni/08_databook/pdfs/01-07.pdf>.
- 2009z, '[8] Malaysia', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryo/kuni/08_databook/pdfs/01-08.pdf>.
- 2009za, '[9] Myanmar', Mar. 27, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/shiryo/kuni/08_databook/pdfs/01-09.pdf>.
- 2010a, 'Nihon - noh - ODA - purojekuto: Indonesia (Japan's ODA Projects: Indonesia)', Jan. 25, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/data/gaiyou/odaproject/asia/indonesia/contents_02.html>.
- 2010b, 'Nihon - noh - ODA - purojekuto: the Philippines (Japan's ODA Projects: The Philippines)', Mar. 15, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/data/gaiyou/odaproject/asia/philippines/contents_02.html>.
- 2010c, 'Nihon - noh - ODA - purojekuto: Vietnam (Japan's ODA Projects: Vietnam)', Mar. 3, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/data/gaiyou/odaproject/asia/vietnam/contents_02.html>.
- 2010d, 'Tai - Indonesia - enshakkan: kikohendo - taisaku - puroguramu - rohn (Yen Loans for Thai & Indonesia: Counter Measure Program Loans for Climate Change)', Jan. 25, accessed Mar. 15, 2010.
<http://www.mofa.go.jp/MOFAJ/GAIKO/oda/data/gaiyou/odaproject/asia/indonesia/pdfs/091210_1_01.pdf>.
- Mori, A 2005, 'Environmental Issues and Regional Cooperation in East Asia', *Journal of Environmental Information Science*, vol. 34, no. 3.
- Mori, H 2008, 'Current State of the Environment in Asia and its Environmental Challenges', *Environmental Research Quarterly*, no. 150.
- Nam, S 2002, 'Ecological Interdependence and Environmental Governance in Northeast Asia: Politics vs. Cooperation', in P Harris (ed.), *International Environmental Cooperation: Politics and Diplomacy in Pacific Asia*, University Press of Colorado, Boulder (Colorado).
- Noguchi, T 2007, 'The Progress of Regional Environmental Cooperation in East Asia', *Journal of the Japan Sea Rim Studies*, vol. 13.
- Ogawa, T 2008, 'Cooperation in the Northwest Pacific Region', *Environmental Research Quarterly*, no. 150.
- Ohno, A 2008, 'Social Capacity Assessment on ASEAN as a Body of International Environmental Cooperation', *Kobe International University Economic and Management Review*, vol. 28, no. 2.
- Schreurs, M 2009, 'Problems and Prospects for Regional Environment Cooperation in East Asia', in M Curley & N Thomas (eds), *Advancing East Asian Regionalism*, Routledge, London, pp. 202-228.
- Someno, K 2009, 'Nicchuu - kankyo - kyoryoku - noh - rekishi - toh - doukou ('History and Trends of Japan-China Environmental Cooperation')', *Chuugoku - kankyo*

- mondai - kenkyukai (ed.), *Chuugoku - kankyo - handobukku [2009-2010 nendoban]* (Handbook of Chinese Environment Issues [Version of Fiscal Year 2009-2010]), Sososha, Tokyo.
- Takahashi, S, et al. 2010, 'Higashi - Asia - niokeru - Kankyo - Kyoryoku - no - Arikata: Ho - Seido - karano - Approach (Current Status of Environmental Cooperation in East Asia: An Approach from Legal Institutions)', *Jichi Kenkyu (Autonomy Studies)*, vol. 86, no. 8.
- The Energy and Resources Institute 2010, '3rd India-Japan Energy Forum: Energy efficiency and Renewables - Opportunities for technology cooperation', Mar. 10, accessed Mar. 10, 2010.
<http://www.teriin.org/index.php?option=com_events&task=details&sid=255>
- The Sino-Japanese Friendship Centre for Environmental Protection, 2010, webpage, Mar. 6, accessed on Mar. 6, 2010. <<http://www.sepa.gov.cn/japan/index.htm>>.
- Tsuji, D, Kaneko, K & Nakajima, N 2007, 'Nichi - inn - enerughii - fouramu - kaisai - houkoku (Indo) (Report on Japan-India Energy Forum [in India])', *NEDO Kaigai-repoutoh (NEDO Overseas Report)*, no. 997.
- Yamazaki, M 2009, 'Sogorieki - wo - motarasu - nicchuu - kankyo - kyoryoku (Japan-China Environmental Cooperation to Bring in Mutual Benefits)', S Kan et al. (ed.), *Chuugoku - keizai: Seicho - noh - kabe (A Barrier against Economic Development of China)*, Keisoshobo, Tokyo.

GIARI Working Paper Vol. 2010-E-7,

February 2011

Published by Waseda University Global COE Program

Global Institute for Asian Regional Integration (GIARI),

Waseda University, Nishiwaseda Bldg. 5F#507 1-21-1

Nishi-waseda, Shinjuku-ku, Tokyo 169-0051 Japan

E-mail: affairs@waseda-giari.jp

Webpage: <http://www.waseda-giari.jp>

Printed in Japan by TRY-EX Inc.