

## **Chapter 2. Research on Transnational Networking for Environmental Sustainability Issues in East Asia**

Kenji Otsuka and Hein Mallee

### **Abstract**

Aiming at stimulating the discussion over the governance of cooperative solutions for complex cross-sectoral and cross-border issues concerning common threats to environmental sustainability in East Asia, this article seeks approaches to research on transnational networking for environmental sustainability issues in East Asia. First, we review some approaches to research on transnational networking focusing on policy network and epistemic community in political sciences and international relations as well as transdisciplinary research as an emerging field in sustainability sciences. Second, we review the process of an international workshop held in Seoul, October 2017 with the aim to discuss the governance and management of transnational networking cooperation on environmental sustainability issues in East Asia. Third, we discuss findings and tasks for transnational networking cooperation based on discussion in the workshop. Lastly, we point out prospects and challenges for the next step of our research.

Keywords: East Asia, environmental sustainability, policy network, epistemic community, transdisciplinary research, transnational network

### **Introduction**

People in East Asia are facing various environmental sustainability problems which threaten the human security in terms of their life, livelihood, and dignity (UNDP 1994), including air, water, and soil pollution, the health impacts of these, frequent natural disasters such as earthquakes and extreme weather, the risk of nuclear power plant accidents like Fukushima Dai-ichi Plant in Japan, and so on. In order to address these common threats, there are ongoing multi-layered and multi-stakeholder activities including

national governments' public policies, bi- and multi-lateral official cooperation, and transnational cooperation between NGOs as well as academic research groups in this region. However, these efforts can be impeded by geopolitical and historical factors including different views for the World War II, the cross-strait relation, the divided status quo in the Korean Peninsula, the emerging economic power of China and other sovereignty issues among nations (Otsuka 2016).

Aiming at stimulating the discussion over the governance of cooperative solution for complex cross-sectoral and cross-border issues in East Asia, this article seeks approaches to research on transnational networking for environmental sustainability issues in East Asia. First, we discuss some approaches to research on transnational networking focusing on policy network and epistemic community in political sciences and international relations as well as transdisciplinary research as an emerging field in sustainability sciences. Second, we review the process of the international workshop held in Seoul, October 2017 to aim at discussion over the governance and management of transnational networking cooperation on environmental sustainability issues in East Asia. Third, we discuss findings and tasks for transnational networking cooperation based on discussion in the workshop. Lastly, we point out prospects and challenges for the next step of our research.

## **1 Approaches to Research on Transnational Networking for Environmental Sustainability Issues**

### 1.1 Policy Network and Epistemic Communities

Environmental sustainability problems are often intricate as well as uncertain in terms of not only the natural environmental system but also the human social system (World Commission on Environment and Development 1987). As shown in the web of interrelations between 17 targets in Sustainable Development Goals (SDGs) (Blanc 2016), they cannot be solved by any single approach, rather they need cross-sectoral, multi-stakeholder approaches.

From the perspective of plurality of sectors as well as stakeholders in the process of policy formation and implementation, the policy network approach is worth to be examined. In early works in this research field, Hanf and Scharpf discuss prescriptive and empirical perspectives on interorganizational policy networks (Hanf and Scharpf 1978). This approach focuses not on single organizations or policy actors but on “the set of interrelationships that constitute the interorganizational network” as the unit of analysis

(Hanf 1978, 11), which consists of “separate but interdependent organizations where the collective capabilities of a number of participants are essential for effective problem solving” (Hanf 1978, 2). It should be noted that policy formation and implementation are “inevitably the result of interactions among a plurality of separate actors with separate interests, goals, and strategies” (Scharpf 1978, 347). So in policy network studies (interorganizational policy studies) it is important “to identify the ‘objective’ need for specific types of interorganizational coordination with reference to the requirements of a particular type of policy within the constraints of a particular decision structures; as well as the empirical factors facilitating or impeding necessary interorganizational coordination in actual policy process” (Scharpf 1978, 350). In this sense, “transfers of material resources, of information and of legitimacy” (Scharpf 1978, 352) should be investigated as functions of networks in terms of empirical research.

Along with the development of policy network studies, the concept of policy network has been redefined in the context of the emerging governance system in Western democratic countries. Enroth characterizes the concept of policy network in three aspects, which are “interdependence”, which means “network participants are mutually dependent on each other’s resources in order to realize their objectives”; “coordination”, which means “network participants need to act jointly in order to realize shared objectives”; and “pluralism”, which means “networks are relatively autonomous vis-à-vis other networks and the state” (Enroth 2011, 27). This definition makes it clear that policy network includes the state as well as non-state actors, which are mutually interdependent to act jointly for coordination to realize shared objectives.

In terms of public governance, Torfing argues that a governance network can be defined as “networks of interdependent actors that contribute to the product of public governance” (Torfing 2012, 99). He sets out the research agenda on governance networks as below: “whether soft rules are less effective in governing behavior than hard laws”; “how to evaluate and assess the performance and impact of governance networks”; “whether there is a trade-off between the performance and impact of governance networks on different normative criteria”; and “the role of politics and power in network governance” (Torfing 2012, 108-110). These empirical questions relativize the role of the nation state in public policy focusing on horizontal but interdependent relationships between the state and non-state actors.

In addition to these discussions of policy networks, Knoke (2016) raises “five basic type of interorganizational relations, each of which may reveal a distinctive network structure: resource exchange, information transmission, power relations, boundary

penetration, and sentimental attachments” (Knoke 2016, 3). In this definition, it should be noted that a subjective perspective such as sentimental attachments is explicitly added to the concept of policy networks.

In seeking transnational cooperation for environmental sustainability problems in East Asia, a view of transnational policy network would be worth examining. In terms of transnational network, “epistemic community” studies give us valuable insights (Haas 1992a). As a case of the Montreal Protocol on Substances That Deplete the Ozone Layer in the 1980s, an ecological epistemic community as a transnational network composed of atmospheric scientists and policymakers played an important role to influence not only international politics but also domestic politics in policy making in an uncertain and complex scientific, social, economic and political situation (Haas 1992b). Haas identifies such a transnational network by four characteristics: “(1) a shared set of normative and principled beliefs, which provide a value-based rationale for the social action of community members; (2) shared causal beliefs, which are derived from their analysis of practices leading or contributing to a central set of problems in their domain and which then serve as the basis for elucidating the multiple linkages between possible policy actions and desired outcomes; (3) share notions of validity- that is, intersubjective, internally defined criteria for weighing and validating knowledge in the domain of their expertise; (4) a common policy to which their professional competence is directed, presumably out of the conviction that human welfare will be enhanced as a consequence” (Haas 1992a, 3).

In comparison with a concept of policy network discussed above, as Haas points out, the epistemic community has these four characteristics while policy network has only two of them such as causal beliefs and policy enterprise (Haas 1992a, 6). In this sense, the epistemic community could be considered as a special type of policy network, in stressing more the socially constructed views in policy process. Also, it is important to mention that the approach of epistemic community studies will “differ from the behavior typically analyzed and predicted by rational choice theorists and principle-agent theorists” (Haas 1992a, 20). These insights give us some keys in investigating transnational, issue-specific, knowledge-based, and value-shared networks to address environmental sustainability issues in East Asia.

The environmental regional governance in East Asia is considered to be soft, weak or informal in institutional building compared to that in Western countries (Reimann 2014, 645). Although there can be found some transnational activities of NGOs to protest environmental deterioration (Reimann 2014, 647-648), the role of transnational networks are also weak, because it is considered that the role of nonstate actors are limited (Komori

2010), or easily entrapped in the state (Acharya 2011) under the strong sovereignty of nation states in the region.

## 1.2 Transdisciplinary Research

While mostly separate from the literatures on policy making, policy networks and epistemic communities, the literature on transdisciplinary science is also relevant to the issue of international collaboration on complex environmental issues in East Asia. The relationship of science and research to environmental degradation is a complicated one. Some problems, like for example air pollution in East Asia, are directly affecting the population and can be readily noticed. Others, such as ocean acidification or the gap in the ozone layer, can only be understood through scientific research, which uncovers the phenomena and their underlying mechanism and drivers. It is often expected that scientific findings and data can provide reliable benchmarks in debates about causes and severity of problems or even about responsibility and solutions. At the same time, the uncertainty inherent in scientifically examining large-scale complex problems makes that insights and data cannot bring closure to such debates. Science has thrived through reductionism – breaking down problems to smaller elements to analyze them – and this is reflected in the proliferation of academic disciplines. However, the resulting fragmentation and specialization of science may now be hampering the ability of science to address large, complex problems.

In recent years, calls for science to contribute more directly to solving environmental problems have grown louder. It is argued that, in the face of (for example) climate change, biodiversity loss, ocean acidification, nuclear waste problems or bacterial antimicrobial resistance, the challenges facing humanity are of such magnitude and complexity that “conventional” research is no longer sufficient (science, in fact, may be implicated in causing the problems).<sup>1</sup> This has given rise to a new research approach (“style”) that is most commonly referred to as transdisciplinarity. The literature includes a wide range of definitions, understandings and usages of transdisciplinarity, but, in recent work on environmental issues and sustainability science, it is commonly considered as at least including two aspects.

The first is that transdisciplinary research not only integrates different scientific

---

<sup>1</sup> This is the main argument in the “post-normal science” literature, see Funtowicz and Ravetz (1993; 2003).

disciplines – the domains of the researchers – but that it also incorporates other types of “non-scientific” knowledge held by groups in society. Thus, transdisciplinarity has the function of bridging different knowledge systems (or knowledge *cultures*).

The second element is that transdisciplinary research aims to solve concrete, real-world problems, rather than grapple with “academic” questions and hypotheses.<sup>2</sup> Pohl and Hirsch Hadorn (2007, 20) expand this element by stipulating that the research needs to contribute to the common good.) Adding the two elements together, in concrete project situations we see researchers from different academic disciplines collaborating closely with stakeholders (or “practitioners”) in striving to contribute to the solution of pressing problems.<sup>3</sup> The need to actively engage practitioners has tended to limit the scope of transdisciplinary research to local or regional scales (Brandt et al. 2013). In many ways, transdisciplinarity incorporates and builds on extensive experience in participatory research, action research, public participation in policy, etc. However, the recent transdisciplinary literature emphasizes the obligation of researchers in this approach to contribute *both* to real-world problem solving and the advancement of scientific knowledge (Jahn et al. 2012).

Transdisciplinarity is relevant to the discussion of policy networks and epistemic communities. Transdisciplinarity is most commonly positioned as *one kind of research* or a specific approach to research. In other words, science-society collaboration is approached from the science side of the equation. When viewed from the opposite side – that of society and of policy change – scientists become one among several groups engaged in these processes. They no longer are necessarily the producers of privileged scientific knowledge about environmental change, but rather *stakeholders* who need to act strategically and collaboratively in order to contribute to policy change and problem-solving. From this perspective, relevant research questions include:

- (i) What is the role of scientific knowledge in environmental governance?
- (ii) What is the role of the producers of such knowledge in policy networks and

---

<sup>2</sup> See Jahn and Keil (2012) and Lang, et al. (2012). A key reference is Hirsch Hadorn et al. (2008).

<sup>3</sup> The term transdisciplinarity is sometimes used as referring to the integrated collaboration of different scientific disciplines, which is more commonly labeled as “interdisciplinary.” Conversely, in some cases, “interdisciplinarity” is used in the sense in which “transdisciplinarity” is used here: “research that involves experts from multiple disciplines and stakeholders investigating a common problem” (Bammer 2013, 7).

epistemic communities?

(iii) How do scientists organize themselves for policy impact?

(iv) How do science-based networks engage with policy processes and with other types of actors?

(v) Are scientists able to play relatively neutral and independent roles in international environmental governance? Are linkages among scientists from different countries free from the constraints of national interests and politics?

### 1.3 The Case of East Asia

In an empirical study on transnational networks on environmental sustainability problems in East Asia, Shapiro argues that “there is an epistemic community in Northeast Asia in which groups of ecologists within and across borders resist short-term political concerns, inform policymakers, and see beyond the narrow view of opportunity costs of environmental policies”, using available data including the number of air pollution-related patent application and indexes of internationally co-authored articles in Japan, Korea, China and Taiwan (Shapiro 2014, 28).

On the other hand, analyzing the bibliometric data on scientific publications related to EANET (the Acid Deposition Monitoring Network in East Asia) to examine the structure of coauthor network, Yarime and Li (2017) point out that the “fragmentation of expert groups within EANET and among the major international schemes on air pollution in East Asia contributed to discouraging solid formation of an epistemic community covering air pollution comprehensively in the region”.

These empirical studies stimulate discussions about the status and characteristics of transnational networks on environmental sustainability in East Asia, however, they don't show any subjective aspects of epistemic community which can be differentiated from other networks.

As Reimann points out, “domestic politics matter” in terms of weakness of environmental regionalism in East Asia (Reimann 2014, 656). In terms of the role of nonstate actors in environmental activities in East Asia, China is a country that maintains persistent social control over them. From the side of the NGOs' view in China generally, Hsu and Hasmath examine awareness of Chinese NGOs for epistemic communities by conducting 102 interviews in the active fields of welfare, health, environment and

education in four cities<sup>4</sup> and conclude that “Chinese NGOs, by and large, do not yet consider themselves part of an epistemic community” (Hsu and Hasmath 2017, 35). Although they discuss mostly domestic perspective of epistemic communities which could contribute to production of knowledge sharing with decision makers and have a pessimistic perspective for their development as epistemic communities in the near future, they also suggest one possible scenario of their development going for abroad to be further investigated.

The transdisciplinary approach has been embraced by Future Earth, an international initiative that brings together over 20 networks of researchers under one organizational umbrella (see [www.futureearth.org](http://www.futureearth.org)). Future Earth builds on the strengths of pre-existing research networks (which range in approach from conventional scientific research to more engaged, problem-solving research), but in particular explores niches for research to be co-designed and co-produced by researchers and societal partners. Researchers from China, Korea, Taiwan and Japan<sup>5</sup> all participate actively in Future Earth research and regional networking and National Committees or equivalent structures have been established in each. To what extents these linkages and networks are enabling East Asian scientists to contribute to constructive multilateral dialogue is one of the questions this project strives to address.

## **2 The Joint Workshop on Networking for Environmental Sustainability Cooperation in East Asia**

In order to examine the potential and challenges of transnational network among scholars, governments, and NGOs on environmental sustainability problems in East Asia, The Sejong Institute, Korea Environment Institute (KEI), the Institute of Developing Economies (IDE), and the Ministry of Foreign Affairs of Republic of Korea jointly held an international workshop on October 12nd, 2017 in Seoul (see the outline of the joint workshop, see Annex I).

The workshop consisted of three sessions. The first session focused on experiences and prospects of multi-lateral networking on non-traditional security issues in East Asia. This session dealt with not only environmental sustainability issues in East Asia but also

---

<sup>4</sup> Four cities are Chongqing, Kunming, Nanjing and Shanghai.

<sup>5</sup> This is an order which organizational structures were established in East Asia.

broader issues about non-traditional security in broader Asian region to review recent development in this field. This session was also based on a three-year initiatives “the Northeast Asia Peace Cooperation Initiative (NAPCI)” organized by the Sejong Institute and the Ministry of Foreign Affairs of Republic of Korea. So, three speakers were selected by the Sejong Institute.

The second session aimed to share experiences of regional cooperation on environmental sustainability issues from different perspectives. In this session, IDE and the Sejong Institute invited Japanese participants as well as research team members, while KEI invited Korean participants. In addition to them, IDE introduced one international environmental NGO, Natural Resource Defense Council (NRDC) based in Beijing and KEI invited one Korean participant from the organization. Also the Sejong Institute invited one Korean participant from a Japanese institute, Hiroshima Peace Institute, which is the counterpart of NAPCI in Japan.<sup>6</sup>

In this session, we organized the “hub-persons” in different networks to reflect and evaluate their practices by some points of views provided by the IDE research team and discuss how to improve transnational networking practices more active as well as effective to cooperative solution of common environmental sustainability issues in East Asia.

Here we define the “hub-person” as a key person who is active in boundary spanning beyond fields, nations and organizations to bridge/connect different networks. The “hub-person” could be an official, researcher/scholar, or activist of NGOs and could be found at the node of “policy network”. We expected to explore possibilities and challenges for epistemic community building on environmental sustainability issues in East Asia.

The research questions provided by the IDE research team before the workshop were the following.

- Networking management:
  1. What kinds of issues do you tackle with in your transnational collaboration?
  2. What kinds of joint projects did/do you have?
  3. What kinds of persons and organizations do you collaborate with?
  4. What kinds of outputs did you have through joint projects?
  5. Do you think that sufficient information was shared to conduct the project?
  6. Do you think that sufficient resources are allocated to the project?

---

<sup>6</sup> We tried to invite Chinese participants besides our research team member, but it was difficult to do so under the time, language, and cost constraints.

A. financial resources; B. human resources; C. technical resources.

7. Do you have any unexpected outcome through the projects?
8. Could you introduce an example of how conflicts were tackled in implementing joint projects?
9. What challenges do you have in sustainable transnational networking?
10. What plan do you have for further development of the transnational networking?

● Networking capacity:

Which factors do you find as obstacles for your transnational networking on environmental sustainability issues?

1. Fragmentation in the government
2. Fragmentation among the academics
3. Insufficient information sharing
4. Insufficient resources for policy studies
5. Less public support for policy studies
6. Dependency of academic activities on the government
7. Dependency of citizen activities on the government
8. Intolerance towards criticizing of authority
9. Small space for public participation in policy making

● Networking governance:

Do you agree the following statements?

1. Environmental sustainability issues are becoming cross-border security issues in East Asia.
2. Cooperative solution for such issues will be beneficial for people in East Asia.
3. We are facing the “Asian Paradox”.  
“Asian paradox” here means the situation of “deepening distrust and conflict in tandem with widening economic and human exchanges”.
4. Environmental cooperation can be leveraged or catalyzed to enhance trust-building in improving international relationships generally in East Asia.
5. Environmental issues can be tackled freely from political conflicts between countries in East Asia.
6. It is possible to share a common value of environmental sustainability among people in East Asia.
7. More scientific research cooperation can result in a transnational cooperative

initiative for environmental sustainability solution.

In the third session, the IDE research team organized discussions based on interests of each participant while remarking the above questions when they are related to. In the next section, we summarize discussions and reveal findings.<sup>7</sup>

### **3 Discussions at the Workshop<sup>8</sup>**

#### 3.1 Nuclear Safety

The Nuclear safety issue is one of possible cooperative fields in East Asia regarding environmental sustainability which gained prominence among the participants. The accident of Fukushima's No.1 Nuclear Power Plant generated momentum, leading Taiwan and South Korea to switch their nuclear policy implementation. Moreover, in Japan some plants among more than 40 power plants were closed down and only five plants have passed through tightened security regulations. Although the current administration in Japan is planning to reactivate nuclear power plants to the extent possible, the majority of the Japanese public is cautious about it and in fact construction of the new one is practically impossible at this stage.

Furthermore, there is an indication that electric power companies became more reluctant to construct new power plants due to high costs. Japan is moving towards the removal of nuclear power generation, however when that will be is under discussion. Meanwhile as NGOs playing a central role, discussions on the transition to renewable energy beyond the borders received attention from participants. On the other hand, as the cancellation of an international conference organized by and NGO working on nuclear safety issues in India shows, the issue remains politically sensitive in Asian countries that are building nuclear power plants. It could be said that different directions of nuclear power policy across countries could impede nuclear safety cooperation networking.

---

<sup>7</sup> For contents of each presentation, see the final report on “2017 Joint Workshop on Networking for Environmental Sustainability Cooperation in East Asia”, compiled by The Sejong Institute, Korean Environment Institute, Institute of Developing Economies and Ministry of Foreign Affairs of Republic of Korea.

<sup>8</sup> This section was originally written in Japanese by Kenji Otsuka and submitted to the Sejong Institute team for the final report of the workshop. Some parts were changed by the authors.

### 3.2 Measures against Transboundary Air Pollution

Measures against Transboundary Air Pollution also generated high interest among the participants. Cooperative mechanisms for Transboundary Air Pollution in Asia include EANET, LPT, and the Tripartite Environment Ministers Meeting among China, Japan and Korea (TEMM). There were criticisms over such overlapping cooperation frameworks, for instance, EANET is led by Japan, while the LPT is led by Korea, which make it hard to integrate.

Moreover, within the Measures against Transboundary Air Pollution, there are two major fields of joint research which are “monitoring” and “modelling.” Monitoring has included observations both on the ground and the in the sky, allowing the disclosure and sharing of data in real time. Around modelling there have been disagreements among countries concerning source areas of pollution, how far it exceeded the standard, and the sufficiency of simulations. In particular, it is more difficult to reach an agreement due to the conflicting arguments between upwind China and downwind Japan and Korea. It is thought that the disclosure and sharing of the evidence-based results accumulated by experts through modeling seems to be impeded by the national interests.

Meanwhile, in order to overcome those obstacles, it is expected the LPT research results will be reported and shared in the next TEMM. This is noteworthy as it is an attempt to open the way for information disclosure and sharing by mutual agreement made in Minister-level conference TEMM.

### 3.3 Multilateral and Bilateral Cooperation

As an East Asian regional cooperation framework, the inter-governmental dialogue among the three countries of China, Japan, and Korea was discussed. First, since the environmental cooperation between China, Japan, and Korea was promoted by the government as TEMM, the point was made that NGOs and civil society had little room for participation, since it was a simple meeting without independent funding. In addition, there are differences in political system between China and Korea and Japan. Also NGOs in these countries are more dependent on the government comparing to western countries and consequently it was pointed out that it is harder for NGOs to participate in intergovernmental cooperation among three countries.

Furthermore, it was raised that there has not much synergy effect between multilateral cooperation (e.g. TEMM) and bilateral cooperation. It was also pointed out that, as the

ROK-China relation illustrates, bilateral cooperation becomes harder once diplomatic relations are weakened due to political confrontations which relate to factors beyond the bilateral relationship. In this regard it has been noted that Sino-Japanese environmental cooperation has also been influenced by the political conflicts on either historical perceptions or territorial conflicts. It was also introduced that not only cooperation between the central government but also exchanges between cities with participation of small and medium enterprises were seen between China and Japan.

Regarding natural disasters, intergovernmental cooperation has been underway since the World War II and it was pointed out that political confrontations between the countries were not salient in this field. Additionally, China's interest in Japan's experience of linking administration and the private sector in response to disasters is growing and this demand for sharing experiences can be one of the catalysts for regional cooperation.

On the other hand, it is worthwhile to consider whether international organization and various global networks can play a certain role in overcoming obstacles of cooperation in Measures against Transboundary Air Pollution or TEMM. For example, in South America, the UN Latin America and Caribbean Economic Commission is taking regional cooperation initiative. Then is it not possible for ESCAP to play such a role in Asia? In the fields of environmental law and administrative law, the association of judges and open governmental partnership is being promoted. In this light, it has been suggested that East Asian regional cooperation needs to be reassessed from the role of international organizations and global networks

### 3.4 Role of NGOs

Regarding the role of NGOs, there was a question and answer session on cooperation in this sector related to the issue of nuclear safety. While adoption of the nuclear non-proliferation treaty has been halted among possessing-countries, member-countries, and non-nuclear countries, the role of NGOs in networking has been emphasized. In addition to this, it was pointed out that networking among NGOs is underway regarding the transition from nuclear or fossil energy to renewable energy.

The role of international NGOs in China's environmental policy measures was discussed based on the experiences of U.S. environmental NGO, NRDC which holds office in Beijing. Firstly, there is a difference in the style of activity in the home country (U.S.) and China. The NRDC initiates protest movements in the U.S. however in China this is against the law. Therefore, it adopts the approach of consulting about technology or policy

as an expert group. This is a necessary adaptation measure for international NGOs of U.S. and Europe when working in China. Secondly, there is the impact of institutionalization of international NGOs since last year. The registration system for international NGOs has been adjusted not only in China but also in India. There is a concern that this would undermine the activities of international NGOs. Thirdly, it was pointed out that China expects to learn from the experience of developed countries instead of pursuing material and financial cooperation with international NGOs. For instance, NRDC, from 2005 to 2008, conducted a training for capacity-building on energy policy for the government and electronic power companies.

What are the roles of NGOs in environmental cooperation in East Asia? For example, there have been cases of networking with Japanese environmental conferences and environmental NGOs in East Asia and Southeast Asia, but it has been noted that self-sufficiency and humanitarian assistance were the major challenges. Especially in Northeast Asia, the development of civil society, how the political and social system changes, and how the relationship between NGOs and the government is changing are the biggest challenges. It was also expressed that NGOs could play an important role in overcoming the vulnerability of government-led partnerships.

### 3.5 Remaining Challenges

Regarding traditional and nontraditional security cooperation which were the core issues in the first session, we could not deepen our discussion due to the time limits. The opinions were as follows. First, in promoting networking there was an opinion that it is necessary for each country and each entity to clarify how to figure out benefits and merits through mutual cooperation around common issues of environmental sustainability faced by all of humanity, beyond political, economic and social conditions, difference in national interest, and political confrontation. Second, in order to sustain and develop civil society-led networking like this workshop, it has been suggested that it is necessary to make diplomatic staff of each government to be aware of its significance and progress.

## 4 Findings and Challenges

Through the workshop, we have found several points as follows.

First, we can find different level of networks in the cases provided by the participants, from the grass-roots level (researchers and volunteers) to the middle level (think-tanks and

NGOs) and the high level (inter-governmental meeting like TEMM). So if we look into transnational network on environmental sustainability issues in East Asia, we should rivet our eyes on multi-level interactions among stakeholders.

Second, as the characteristics in transnational networks shown in the workshop, we can find two types including issue-specific ones (biodiversity conservation, disaster risk reduction, nuclear safety, environmental law, etc.) and general ones (TEMM). It should also be noted that even in the issue-specific networks, we can find various activities across sectors as seen in biodiversity conservation and disaster risk reduction, where there are a variety of stakeholders involved.

Third, both potentials and obstacles of transnational cooperation in terms of networking between a variety of stakeholders can be found. For potentials, we can find a sharing value for transboundary air pollution control, energy transition from fossil fuels to renewable energy sources and nuclear safety among participants. However, the state sovereignty in air pollution modeling and nuclear energy policy are seen as obstacles for networking among nonstate actors in Asia.

Remaining questions are: How could we proceed NTS (non-traditional security) cooperation under the unfavorable situation of TS (traditional security) cooperation in East Asia? And how could the result of NTS cooperation connect to better situation of TS cooperation? What roles are there for scientific knowledge and for scientists in such processes?

This workshop is an experimental dialogue as well as research on transnational networking for environmental sustainability cooperation in East Asia in terms of sharing experiences and views of different networks via hub-persons of them. We also have a lot of defects of this social experiment such a bias of selection of hub-persons, a lack of Chinese participants, a lack of structured analysis and so on. For the next step of this research, we should take into account these issues as far as possible.

Annex I. the Outline of the Joint Workshop on Networking for Environmental Sustainability Cooperation in East Asia, October 12, 2017, Seoul

1. Date: October 12 (Thurs) 2017, 10:00~18:00
2. Venue: Grand InterContinental Seoul Parnas / Carnation Hall, 5F
3. Co-Host & Sponsor: The Sejong Institute (ROK)  
Korea Environment Institute (ROK)  
Institute of Developing Economies (Japan)  
Ministry of Foreign Affairs, ROK
4. Participants: 25 persons (except for interpreters)
5. Language: Korean-Japanese simultaneous translation provided
6. Program

<b>09:30-09:50</b>	Registration		
<b>09:50-10:00</b>	Opening Remarks from Host Institutes		
<b>Session I. Experiences and prospects of multi-lateral networking on non-traditional security issues in East Asia</b>			
<b>10:00-12:00</b> (120 mins)	<b>Moderator: LEE, Sang Hyun</b> (The Sejong Institute)		
		<b>Subject</b>	<b>Presenter</b>
	Presentation #1	The Experiences of NAPCI and prospects for the post-NAPCI activities	<b>CHOI, Eun Mi (ROK)</b> (The Sejong Institute)
	Presentation #2	Experiences and prospects of networking by the Council on East Asian Community	<b>KIKUCHI, Yona (Japan)</b> (The Japan Forum on International Relations, INC)
	Presentation #3	The Experiences and Challenges of UBD for multilateral cooperation in Northeast Asia	<b>Dorjsuren Nanjin</b> (ISS Mongolia)
	Discussion	<b>All</b>	
<b>12:00-13:00</b>	<b>Luncheon</b>		
<b>Session II. Sharing Experiences of Regional Cooperation on Environment Issues</b>			
<b>13:10-15:40</b> (150 mins)	<b>Moderator: ISOZAKI, Noriyo</b> (Gakushuin University) and <b>CUI, Shunji</b> (Zhejiang University)		
		<b>Subject</b>	<b>Presenter</b>
	Key questions for networking building for environmental sustainability cooperation in East Asia		<b>OTSUKA, Kenji (IDE-JETRO)</b>
	Experiences and challenges of TEMM: from Korean point of view		<b>CHU, Jang Min (KEI)</b>

	Experiences and challenges of TEMM: from Japanese point of view	<b>OKAZAKI, Yuta</b> (Sophia University)
	One Belt and One Road networking on environment, energy and health	<b>KIM, Hyoung Mi</b> (NRDC)
	The role of ADRC in trilateral cooperation on disaster prevention and reduction: focusing on the nexus of environment and disaster	<b>UEDA, Kazuhito</b> (ADRC)
	Experiences of regional cooperation in Environment law	<b>CHOI, Yoon Cheol</b> (KonKuk University)
	Challenges for transnational networking on environmental justice in Asia	<b>OKUBO, Noriko</b> (Osaka University)
	Experiences of regional cooperation in Biodiversity	<b>LEE, Hyun Woo</b> (KEI)
	Experiences of regional cooperation in Air pollution	<b>LYU, Young Sook</b> (NIER)
	Experiences of regional cooperation in Nuclear Safety	<b>KIM, Young-Geun</b> (Korea University)
	Challenges for transnational networking on nuclear safety in Asia	<b>BAN, Hideyuki</b> (CNIC)
	Role of International NGO monitoring Networking on Nuclear Safety	<b>SON, Hyun Jin</b> (Hiroshima Peace Institute)
	Discussion	<b>All</b>
<b>15:40-16:00</b>	<b>Coffee Break</b>	
<b>Session III. Wrap-up</b>		
<b>16:00-17:30</b>	<b>Moderator: CHU, Jang Min (KEI) and OTSUKA, Kenji (IDE-JETRO)</b>	
	Discussion	<b>ALL</b>

## References

- Acharya, A. 2011. "Engagement or entrapment? Scholarship and policymaking on Asian regionalism," *International Studies Review*, 13(1): 12-17.
- Adler, E., & Haas, P. M. 1992. "Conclusion: epistemic communities, world order, and the creation of a reflective research program," *International Organization*, 46(1): 367-390.
- Bammer, Gabriele 2013. *Disciplining Interdisciplinarity: Integration and Implementation Sciences for Researching Complex Real-World Problems*, Canberra, ANU E-Press.
- Blanc, David Le 2016. "Sustainable development goals and policy integration in the nexus." In *The Water, Food, Energy and Climate Nexus*, edited by Felix Dodds and Jamie Bartram, Routledge, 47-57.
- Brandt, Patric, Anna Ernst, Fabienne Gralla, Christopher Luederitz, Daniel J. Lang, Jens Newig, Florian Reinert, David J. Abson, Henrik von Wehrden 2013. "A review of transdisciplinary research in sustainability science," *Ecological Economics*, 92: 1-15  
<http://dx.doi.org/10.1016/j.ecolecon.2013.04.008>
- Delborne, Jason, Jen Schneider, Ravtosh Bal, Susan Cozzens, and Richard Worthington 2013. "Policy pathways, policy networks, and citizen deliberation: Disseminating the results of World Wide Views on Global Warming in the USA," *Science and Public Policy*, 40: 378-392. doi:10.1093/scipol/scs124
- Dietz, Thomas, Elinor Ostrom and Paul C. Stern 2003. "The struggle to govern the commons," *Science*, 302 (5652): 1907-1912.
- Enroth, Henrik 2011. "Policy network theory." In *the SAGE Handbook of Governance*, edited by Mark Bevir, SAGE.
- Funtowicz, Silvio O. and Jerome R. Ravetz 1993. "Science for the post-normal age," *Futures*, September 1993: 739-755.
- Funtowicz, Silvio O. and Jerome R. Ravetz 2003. "Post-normal science." In *Internet Encyclopedia of Ecological Economics*.
- Haas, Peter M. 1992a. "Introduction: epistemic communities and international policy coordination," *International Organization*, 46 (1): 1-35.
- Haas, Peter M. 1992b. "Banning chlorofluorocarbons: epistemic community efforts to protect stratospheric ozone," *International Organization*, 46(01): 187-224.
- Hanf, Kenneth 1978. "Introduction." In Hanf and Scharpf eds. 1-15.
- Hanf, Kenneth and Fritz W. Scharpf 1978. *Interorganizational policy making: limits to coordination and central control*, SAGE.
- Hirsch Hardorn, Gertrude, Holger Hoffmann-Riem, Susette Biber-Klemm, Walter

- Grossenbacher-Mansuy, Dominique Joye, Christian Pohl, Urs Wiesmann, Elisabeth Zemp eds. 2008. *Handbook of Transdisciplinary Research*, Springer.
- Hsu, Jennifer Y.J. and Reza Hasmath 2017. “A maturing civil society in China? The role of knowledge and professionalization in the development of NGOs,” *China Information*, 31 (1): 22-42.
- Jahn, Thomas, Matthias Bergmann, and Florian Keil 2012. “Transdisciplinarity: Between mainstreaming and marginalization,” *Ecological Economics*, 79 (2012): 1-10.
- Knoke, David 2016. “Policy networks.” In *the SAGE Handbook of Social Network Analysis*, edited by John Scott and Peter J. Carrington, London: SAGE Publications Ltd. 210-222. <http://dx.doi.org/10.4135/9781446294413>
- Komori, Yasumasa 2010. “Evaluating regional environmental governance in Northeast Asia,” *Asian Affairs: An American Review*, 37: 1-25.
- Lang, Daniel J. ,Arnim Wiek, Matthias Bergmann, Michael Stauffacher, Pim Martens, Peter Moll, Mark Swilling, Christopher J. Thomas 2012. “Transdisciplinary research in sustainability science: practice, principles, and challenges,” *Sustainability*, DOI 10.1007/s11625-011-0149-x.
- Levi-Faur, David ed. 2012. *Oxford Handbook of Governance*, Oxford: Oxford University Press.
- 大塚健司[Otsuka, Kenji] 2016. 持続可能な東アジアのための人間の安全保障を求めて[Seeking human security for sustainable East Asia] 天児慧・李鍾元編 [Amako, Satoshi and Jong Wong Lee] 2016 『東アジア和解への道—歴史問題から地域安全保障へ』 [A Road to Reconciliation in East Asia: A Transition from Historical Conflicts Toward Regional Security Cooperation] 岩波書店[Iwanami Shoten], 189-204.
- Pekkanen,S.M., J. Ravenhill, and R. Foot 2014. “The international relations in Asia.” In Pekkanenm, Ravenhill and Foot eds.3-21.
- Pekkanen, Saadia M., John Ravenhill, and Rosemary Foot eds. 2014. *Oxford Handbook of the International Relations of Asia*, Oxford University Press.
- Pohl, Christian and Getrude Hirsch Hadorn 2007. *Principles for Designing Transdisciplinary Research*. Oekom Verlag,
- Reimann, Kim D. 2014. “Environment, human security, and cooperation in Asia.” In Pekkanenm, Ravenhill and Foot eds.641-663.
- Scharpf, Fritz W. 1978. “Interorganizational policy studies: issues, concepts and perspectives.” In Hanf and Scharpf eds. 345-370.
- Shapiro, Matthew A. 2014. “Regionalism's challenge to the pollution haven hypothesis: A study of Northeast Asia and China,” *The Pacific Review*, 27-47.

<https://doi.org/10.1080/09512748.2013.788067>

The Sejong Institute, Korean Environment Institute, Institute of Developing Economies and Ministry of Foreign Affairs of Republic of Korea 2017. *The final report on “2017 Joint Workshop on Networking for Environmental Sustainability Cooperation in East Asia”*, December 7, The Sejong Institute.

Torfinn, Jacob 2012. “Governance network.” In David Levi-Faur ed. 99-112.

Torfinn, Jacob, B.Guy Peters, Jon Pierre, and Eva Sørensen 2012. *Interactive Governance: Advancing the Paradigm*, Oxford: Oxford University Press.

UNDP 1994. *Human Development Report 1994*. NY: Oxford University Press.

World Commission on Environment and Development, B. C. 1987. *Our Common Future: Report of the World Commission on Environment and Development*.  
<http://www.un-documents.net/our-common-future.pdf>

Yarime, Masaru and Aitong Li 2017. “International cooperation for tackling air pollution in East Asia: Overcoming fragmentation of the epistemic communities,” International Studies Association (IAS) International Conference 2017, University of Hong Kong, Hong Kong, June 15-17.

Yoshimatsu, Hidetaka 2014. “Economic-security linkages in Asia.” In Pekkanen, Ravenhill and Foot eds. 569-585.