Mutual learning through Asian intercity network programmes for the environment

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ABSTRACT

This paper assesses the extent of mutual learning through the international intercity network programmes for the environment in Asia, such as CITYNET, ICLEI-Southeast Asia and the Kitakyushu Initiative for a Clean Environment. Based on participation records of network activities, records of formulation of bi-lateral intercity relations, and a survey of participating cities, this paper argues that international intercity networks in Asia have achieved some modest results in terms of mutual reference and learning among participating cities in relation to the financial resources the networks have been able to mobilise. There may be room to further enhance mutual learning if national governments and international organisations could maintain or increase their financial support of international intercity network programmes even modestly.

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1. Introduction

International intercity network programmes for sustainable urban management are considered to be a decentralised mode of international development, which includes elements of South-South co-operation, or Technical Co-operation among Developing Countries (TCDC). This research aims to assess the effectiveness of three major international intercity network programmes for the environment in Asia, particularly in terms of the realisation of mutual learning, which is the main goal of the participating cities in these networks. In addition, this article provides basic information regarding these Asian intercity network programmes, since most studies have been about European networks. The study also discusses possible ways to further promote effectiveness of the network from the perspective of participating cities, in particular in developing countries.

Although the history of these intercity network programmes in Asia exceeds two decades, there are few studies which have evaluated them systematically[1]. One practical guideline for effective practice transfer through intercity network programmes focuses on lessons learnt and success factors, and yet does not tell a complete picture of effectiveness of network programmes (CITYNET/UNDP/UN-Habitat, 1998). A conference presentation expressed scepticism and observed that intercity network programmes that exchange of information and experience were typically centred on specific events, which were actually not very frequent (Sivaramakrishman, 1999). Moreover, it also asserts that most activities involved a considerable amount of ceremony, so it was often difficult to balance ceremony and substance. Scepticism can even be found among the secretariats of Asian intercity network programmes. One observes that there is little incentive for one-sided intercity co-operation in particular[2]. Still, this scepticism could simply reflect inability to achieve lofty goals rather than a real lack of results; networks may still achieve at least modest accomplishments even if secretariats are not satisfied with them. In any case, it is difficult to find systematic evaluations of network effectiveness based on concrete evidence.

Moreover, there are few studies that address Asian intercity network programmes related to the environment. Keiner and Kim (2007) surveyed 53 international intercity network programmes for sustainability to identify the contents of the programmes, explore the potential for more successful implementation and analyse the challenges and limitations of sustainability-oriented networks. Most of the networks studied are those in which European cities participate. Other studies of international city-to-city co-operation have also focused on those in which European cities have been engaged. These studies are concerned with capacity

building and strengthening urban governance in local communities in developing countries through city-to-city co-operation, and they analysed the patterns of knowledge sharing, learning, and mutuality among cities both in developed countries and in developing countries (van Lindert, 2009; Bontenbal, 2009; Johnson and Wilson, 2009; Campbell, 2009; van Ewijk and Baud, 2009). Bontenbal (2009), for instance, contends that intercity co-operation can strengthen urban governance.

There are two main studies on Asian international intercity networks (Tjandradewi and Marcotullio, 2009; Tjandradewi, Marcotullio and Kidokoro, 2006). Tjandradewi, Marcotullio and Kidokoro (2006) focused on one case of bilateral city-to-city technical cooperation (between Yokohama, Japan, and Penang, Malaysia) rather than multi-city networks. They focused on cities' commitment to the cooperation, communitywide participation in the cooperating cities, clear understanding between partners, reciprocity, and concrete results. Tjandradewi and Marcotullio (2009) focus on only one intercity network programme, CITYNET, and examine participating city mangers' perceptions of key success factors, as well as appropriate areas for intercity co-operation. This study goes beyond Tjandradewi and Marcotullio (2009) by examining two other Asian intercity network programmes in addition to CITYNET, and focuses more specifically on evaluating mutual reference and learning rather than overall effectiveness. Moreover, this study uses network activity data in addition to a survey of city officials. The results of this study show that international intercity network programmes have achieved some level of mutual learning among participating cities, although there is considerable room for further improvement, and this result is broadly consistent with results from previous studies.

Research on policy making among local governments in Japan showed that mutual reference, or learning from other cities' policies, is a major factor contributing to policy development and diffusion, especially in the fields of urban planning and landscape conservation over the past few decades. Other factors besides mutual learning included endogenous policy adoption influenced by local political, economic and social conditions, and peer competition among local governments following policies adopted by the national government (Ito, 2002, 2006). This mutual reference among local governments in Japan occurred without formal network programmes. However, this research on Japan suggests that mutual reference is very significant for policy diffusion, and its analysis would be useful for the study of network programmes of local governments even in developing countries.

The paper is organised as follows. The next section describes the scope and methodology of

the study. Then three major Asian intercity network programmes for the environment – CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative for a Clean Environment – are introduced. After that, the effectiveness of these three programmes is assessed. The concluding section summarises the findings.

2. Scope and Methodology

The study focuses on three major Asian intercity network programmes for the environment. In this study, the international intercity networks are programmes with a management structure and activities carried out among several cities in two or more countries. The three network programmes discussed here are CITYNET, ICLEI Southeast Asia, and Kitakyushu Initiative for a Clean Environment. These networks were selected because their main memberships are local governments and they have relatively larger number of participating cities and higher frequency of activities than other similar networks in Asia[3].

The effectiveness is assessed in terms of the stated objectives of the network programmes, which focus on mutual learning. Evidence of mutual learning and reference is inferred from attendance of the specific network events, adoption of new practices after utilisation of network resources and events, and the agreements and activities of bi-lateral city-to-city co-operation on specific topics. In addition, this study identifies which cities provided knowledge and which cities learned from others.

Participation in events is an important indicator of mutual learning since it is presumed that the more cities believe the events are effective, the more they actually participate in network events. To be sure, attendance of network events may be a necessary condition for the occurrence of mutual learning but it is neither a sufficient condition nor direct evidence of learning. Therefore, participation should be considered an indirect indicator of mutual learning and of an enabling environment that supports mutual learning.

A survey of participating cities on whether they thought the network programme was effective was carried out for the Kitakyushu Initiative for a Clean Environment. This subjective assessment of effectiveness is also used to supplement the objective indicators.

The financing mechanisms and fund raising capacities of the network programmes were also examined to assess the extent to which they were able to mobilise inputs and resources to implement network activities and to deliver outputs. Requirements of membership fees by

participating cities and the extent of external financial support were also studied. The effectiveness of the network programmes should be considered in the context of the available resources, especially financial.

Information was collected through publicly available information on the internet, official documentation, meetings with network secretariats and officials in participating cities, and questionnaires to participating network cities. In order to measure the effects of network programmes, the records of activities and the consequent actions and changes that followed network activities are gathered and the cases that demonstrated actual practice adoption were analysed.

The study does not aim to conduct a comprehensive evaluation that includes statistical or comparative analysis of all successful and non-successful cases, where successful case means the activity of the network programme lead to follow-up and / or changes in actions by cities. Moreover, outcomes such as capacity development and follow-up actions cannot be necessarily attributable solely to participation in network programmes. This study does not focus on other dimensions of effectiveness, such as whether the networks produce changes in local environmental policies, or whether the networks improve the actual quality of the environment. Since examination of local policy change and its outcome in the cities participating in the networks would require field studies of several cities for each network programme, these aspects are left for future in-depth study. Instead, this study focuses more specifically on evaluating the extent to which major Asian networks were able to achieve mutual learning, based on records of actual participation and a survey of member cities' perceptions.

3. Introduction to Asian intercity network programmes for the environment

There are not many intercity networks in East Asia that focus on environmental management and include local governments as the main actors in the network. This study focuses on three major ones[4]:

- CITYNET – The Regional Network of Local Authorities for the Management of Human Settlements – Environmental Component
- ICLEI – Local Governments for Sustainability – Southeast Asia[5]
- Kitakyushu Initiative for a Clean Environment (hereafter referred to as the Kitakyushu Initiative)

CITYNET, ICLEI Southeast Asia and the Kitakyushu Initiative all focus on a common

goal—environmental improvement and sustainable development. These networks aim to contribute to this goal by implementing international activities to share experiences and improve capacity. CITYNET, ICLEI Southeast Asia and the Kitakyushu Initiative started activities in 1987, 1996[6], and 2000, respectively.

All three networks have local governments as their main participating members. Other governmental agencies, international development organisations, local governmental associations, research institutes, and other organisations are also involved in activities as co-operating organisations or associated members.

CITYNET has 70 member cities from 17 countries including Bangladesh, Cambodia, China, Fiji, India, Indonesia, Iran, Japan, Korea, Nepal, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. ICLEI Southeast Asia has 27 member cities from three countries: Indonesia, the Philippines and Thailand. ICLEI Southeast Asia also has 53 cities in total, including some cities that are not official members of ICLEI but still participate in ICLEI-led campaigns. The Kitakyushu Initiative is composed of 62 cities from 18 countries such as Bangladesh, Cambodia, China, Fiji, India, Indonesia, Iran, Japan, Korea, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam.

Local governments that participate in these networks do not include all municipalities in all countries. Rather, most of them are the local governments that are implementing advanced approaches for the environment. Local governmental participation is voluntary in ICLEI and CITYNET. Participation by local governments in the Kitakyushu Initiative was first decided to be at the recommendation of participating national governments at the Ministerial Conference for Environment and Development in Asia and the Pacific (MCED), but local governments interested in participating were added later as the case of Semarang, Indonesia, which joined in 2008.

In all cases, activities in developing countries gain the support of international development agencies, and pilot / demonstration projects in developing countries are implemented through the support of donors. Sometimes local governments from developed countries that participate in these networks also provide support to cities in developing countries as is the case for CITYNET and Kitakyushu Initiative. In addition, ICLEI and CITYNET collect fees from participating local governments and carry out activities with external support.

3.1 Objectives of Asian intercity network programmes for the environment

The objectives of the three international intercity network programmes for the environment in Asia are summarised in Table 1. Although CITYNET has a broader focus[7] than the Kitakyushu Initiative and ICLEI, this study focuses on activities related to environmental management such as solid waste management, wastewater and sanitation, and environmental education. The objectives of the Kitakyushu Initiative are ambitious compared to the other two since ICLEI and CITYNET focus on sharing of knowledge and experiences for capacity development while the Kitakyushu Initiative's objectives also include tangible progress of environmental quality and human health rather than just achieving capacity development through holding training sessions, study seminars, and conferences. Therefore, the stated objective of the Kitakyushu Initiative may have a greater disparity between resources and stated objectives compared to the other networks.

Table 1 Objectives of international intercity network programmes for the environment in Asia

Network	CITYNET	ICLEI – Southeast Asia	Kitakyushu Initiative
Objective[8]	To help local governments provide better services to citizens in management of human settlement	To build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level	To achieve tangible progress in environmental quality and human health in urban areas in Asia and the Pacific

3.2 Activities of Asian intercity network programmes for the environment

International network programmes carry out a variety of activities, which can be classified into four components: 1) financial and technical co-operation, 2) capacity building activities such as training, 3) domestic institutional development such as formulation of national networks, and 4) promotion of bilateral intercity co-operation. Capacity building activities include three sub-categories: a) direct interpersonal communication (meetings to share knowledge and experiences, seminars and workshops, training, study tours, dispatch of experts and consultation), b) information and research (creation of successful practice databases,

development and sale of case study compendiums, implementation of research and studies, and development and sale of reports and manuals, etc.), and c) online materials (publication of documents and workshop materials on websites, provision of activity support tools).

The activity areas operated by each intercity network are shown in Table 2. The provision of financial and technical co-operation, as well as the implementation of capacity building activities is carried out by all networks. However, some networks support the creation of domestic intercity institutions that implement network-related activities in designated countries and bi-lateral international co-operation between local governments, but other networks do not. CITYNET supports the creation of domestic institutions, while CITYNET and the Kitakyushu Initiative promote bi-lateral international co-operation between local governments. Details on the activities of each network are provided in Tables 3 to 5[9].

Table 2 Area of activities of three international environmental networks

Activity area	CITYNET	ICLEI – Southeast Asia	Kitakyushu Initiative
Financial and technical co-operation	○	○	○
Capacity building activities	○	○	○
Domestic institutional development	○	–	–
Promotion of bilateral intercity co-operation	○	–	○

In addition to carrying out technical co-operation projects for environmental education through support from the Japan International Cooperation Agency (JICA) and Yokohama, CITYNET also conducts capacity building activities through continuous training courses, dispatch of experts, and provision of materials on their website. In addition, CITYNET provides support for the development of domestic network programmes (National Chapters). The secretariat also mediates co-operation between cities on the web (Table 3).

Table 3 CITYNET activities

Activity area	Details
Financial and technical co-operation	・ Tsunami-damaged Area Reconstruction Project through support from Yokohama, which is CITYNET's sponsoring city ・ Environmental education and technology co-operation project through support of the Japan International Cooperation Agency (JICA) and Yokohama
Capacity building activities	・ Seminars, workshops ・ Training courses (Related to continuous urban environmental services in the International Training Centre for Local Authorities in Kuala Lumpur) ・ Dispatch of experts, consultations ・ Development and publishing of reports and manuals ・ Publication of documents and workshop materials on website ・ Publication of newsletters
Domestic institutional development	Support for the development of national networks and programs (National Chapters) in Bangladesh, Indonesia, Nepal and Sri Lanka
Promotion of bilateral intercity co-operation	・ Co-operation mediation by the secretariat ・ Matching through website

In ICLEI Southeast Asia, in addition to carrying out financial and technical co-operation for support projects for the introduction of measures in the fields of renewable energy, transportation, energy efficiency and solid waste for climate protection with the support of the United States Agency for International Development, among others, ICLEI also carries out capacity building activities, such as the development of databases for workshops and successful practices and provision of support tools through the internet (Table 4).

Table 4 ICLEI Southeast Asia activities

Activity area	Details
Financial and technical co-operation	・ Capacity improvement projects using urban environmental management tools for local governments (Supporting organisation: European Union) ・ Project on stakeholder evaluation and adoption of agendas for integrated water management (ADB) ・ Project on introduction of measures for climate protection in the fields of renewable energy, transportation, energy efficiency, and waste (USAID, Canadian International Development Agency [CIDA], others)
Capacity building activities	・ Workshops ・ Creation of database on successful practices ・ Provision of activity support tools on website ・ Publication of newsletters

The Kitakyushu Initiative has achieved results in demonstration projects through financial and technical co-operation, with the provision of USD 3,000 to 10,000 from the United Nations for the implementation of project formulation studies on urban environmental issues, guidance by experts, procurement of required materials and equipment, and conduct of seminar. In addition to the organisation of thematic seminars and study tours, the network also offers a database on the internet as a capacity building activity. Co-operation between cities is also mediated by the secretariat (Table 5).

Table 5 Kitakyushu Initiative activities

Activity area	Detailed contents
Financial and technical co-operation	Demonstration projects ・ Financial assistance of USD 3,000 to 10,000 to cities participating in the network from the United Nations Economic and Social Commission for Asia and the Pacific, which is the main organiser of the Kitakyushu Initiative, to practice new measures in air, water, waste, energy and other areas. ・ Financial assistance is used for project development studies, guidance from experts, procurement of necessary equipment, and conducting seminars. ・ Eleven projects were implemented together with financial support from implementing cities.
Capacity building activities	・ Network meetings to share knowledge and experience ・ Thematic seminars ・ Study tours ・ Studies and research by the secretariat on specific topics ・ Creation of a database on successful practices ・ Publication of documents and workshop materials on website ・ Publication of newsletters
Promotion of bilateral intercity co-operation	Co-operation mediation by secretariat

4. Assessment of extent of mutual learning

4.1 Cities' participation in network events

Figure 1 shows the distribution of number of participation in network events by member cities of CITYNET, ICLEI Southeast Asia, and Kitakyushu Initiative, respectively, from highest to lowest. The numbers of cities that have participated in network events at least once for CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative, are 63, 48 and 47, respectively. The numbers of events organised by CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative are 67, 53, and 16, respectively. Therefore, the percent of member cities which participated in at least one activity for CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative were 90%, 91% and 76%, respectively. Therefore, overall, the rate of participation

seems high, although a few cities have never participated in any events. The period of programmes up to 2008 for CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative are 22, 13 and 9 years, respectively. Therefore the numbers of cities that participated in at least one event every 2 years, on average, for CITYNET, ICLEI Southeast Asia and Kitakyushu Initiative are 12, 14 and 18, respectively[10]. These cities can be considered to be those who showed some commitment to network activities and contributed to maintain the networks. The above analysis is summarised in Table 6.

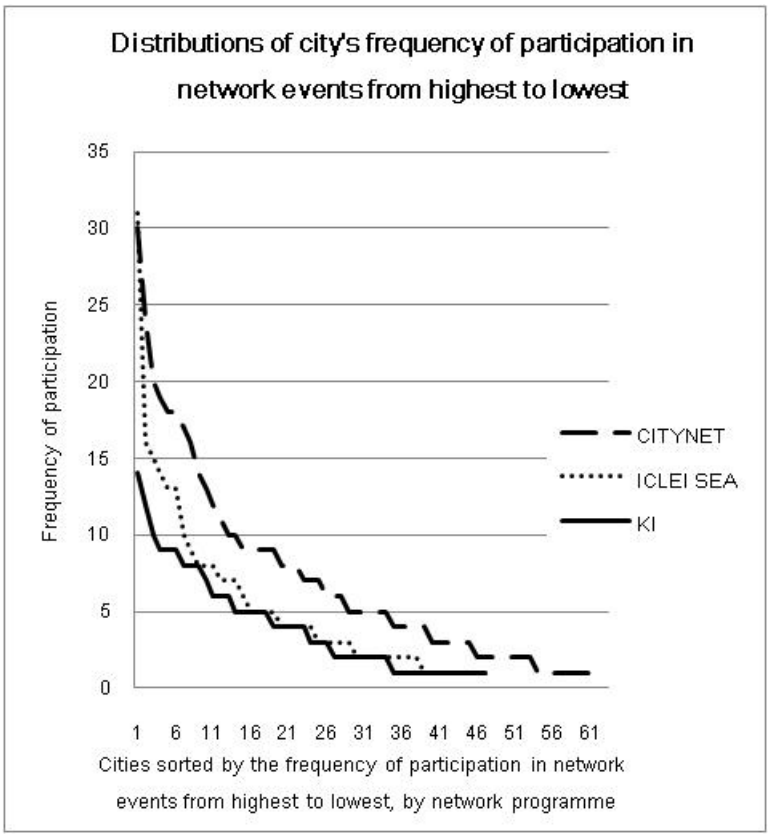

Figure 1 Distribution of cities' frequency of participation in network events by network programme

Distributions are shown from left to right in the order of the frequency of participation of each participating city. The horizontal axis indicates a serial number attached to each participating city of three network programmes: 1 to 63 for CITYNET, 1 to 48 for ICLEI Southeast Asia and 1 to 47 for Kitakyushu Initiative, respectively, where the cities are sorted by the frequency of participation from highest to lowest.

Table 6 Cities' frequency of participation in network events

	CITYNET	ICLEI Southeast Asia	Kitakyushu Initiative
Number of participating cities	70	53	62
Years of network events	22	13	9
Total number of events over the network lifetime	67	53	16
Number of cities participating in network events at least once over the life of the network	63	48	47
Percent of cities participating in network events at least once over the life of the network	90	91	76

As shown in Figure 1, the distribution of cities' frequency of participation is similar in all three network programmes and is asymmetrical. Some cities have a greater frequency of participation while most participating cities have participated in network events more selectively. The five most actively participating cities for each network are shown in Table 7. A higher frequency of participation implies that a city's intention to proactively learn from or contribute to knowledge dissemination at network events. In particular this should be true for the cities from developing countries when they frequently attend the events. The cities that have a higher frequency of participation could be active learners. However, in interpreting these results, it is important to consider that some events may be more or less significant. Just because a city participated in a limited number of events does not necessarily mean that mutual learning was not significant. It may be that some cities that have participated in only a small number of network events might nevertheless have considered them to be very significant for their learning. Or the cities which participated in many events may have found only a few to be significant, but the value of participating in the significant ones was enough to justify continued participation in the network.

Table 7 Top five cities in frequency of participation in network events

	CITYNET	ICLEI Southeast Asia	Kitakyushu Initiative
1	Yokohama (Japan)	Baguio (Philippines)	Kitakyushu (Japan)
2	Colombo (Sri Lanka)	Bohol Province (Philippines)	Surabaya (Indonesia)
3	Makati (Philippines)	Naga (Philippines)	Nonthaburi (Thailand)
4	Dhaka (Bangladesh)	Puerto Princesa (Philippines)	Dhaka (Bangladesh), Weihai (China), Bangkok (Thailand)
5	Kuala Lumpur (Malaysia), Kathmandu (Nepal)	Cebu (Philippines), Mandaue (Philippines)	—

This uneven distribution of participation by member cities could be explained in two ways. First, it might reflect the fact that some cities from developing countries may be receiving relatively more financial assistance for participation. In some cases a network programme may allocate some financial resources to encourage the active participation of some member cities. Limited financial resources to invite cities would be allocated to the cities that show an interest in active participation and potential to effectively utilize the network activities. Second, some cities that have actively participated in many network events are "hub cities" in the networks. Hub cities could be from both developed and developing countries. Hub cities are eager either to learn from other cities, or to disseminate their practices to other cities; some cities, especially from developing countries, are interested in both. The orientation of each member city can be directly observed from an analysis of cities' participation in network activities as explained in the following section.

For the cities that actively participate in the network events, it can be inferred that they believe that the network programmes are worthwhile, while inactive cities see few benefits. Participation in these networks is costly for cities, not only in monetary terms, but also in human resource terms. In order to participate in training, workshops, network meetings and other activities that promote mutual learning, city officials need to take time from their daily operations. This is true for host cities as well. This cost is high for cities in developing countries in particular, which typically suffer from severe shortages of qualified staff. Therefore, if cities are willing to pay these costs, especially over a long period of time, it suggests that the cities believe that the benefits are worth the costs, and that mutual reference and learning is in fact taking place.

To be sure, mutual reference and learning may not be the only motivation for cities to actively participate in international intercity networks. Cities may also participate for non-materialistic reasons of reputation and pride, and not just material benefits like knowledge or financing. Proactive cities with a large frequency of participation may build their reputation among participating cities or even beyond the community of member cities. Enhanced reputation may lead to satisfaction and pride of local government officials or to demonstration of capacity of the city's leaders, which could contribute to their re-election and/or reappointment.

4.2 Mutual reference and learning among network cities

The evidence demonstrates that these networks did lead to the formulation of additional bi-lateral intercity relationships. In the case of CITYNET, bilateral co-operation between two cities has materialised through the support of the secretariat for the following cities: Yokohama and Banda Aceh (Indonesia), Hue (Vietnam), Hanoi (Vietnam), Incheon (Korea) and Phnom Penh (Cambodia); Penang (Malaysia) and Dhaka; Bangkok and Hue (Vietnam); and Seoul (Korea) and Makati. The forms of the co-operation included study tours, feasibility studies, on-the-job training, exchanges of know-how, needs assessments, support for project formation, and training sessions.

The records of cities' participation in network events also imply frequent mutual reference among several cities that have participated often in the same events, in particular Colombo, Dhaka, Kuala Lumpur, Makati and Bangkok. Mutual reference among three of these cities in particular (Colombo, Dhaka, and Makati) is considered literally mutual, meaning that the cities learn and provide knowledge in both directions. The directions of intercity mutual reference are shown in Table 8 based on the records of bilateral intercity co-operation and records of joint participation by six cities that have participated in network events most frequently. This table shows which cities learned certain environmental policies or measures, or received specific environmental co-operation support from which reference city or cities. This record indicates that mutual learning occurred not only between cities in developed and developing countries, but also between cities in developing countries. In other words, cities in developing countries are learning from each other, not just from cities in developing countries.

Table 8 State of intercity mutual reference (CITYNET)

Cities referring to other cities	Cities referred to by other cities
Kathmandu (Nepal)	Colombo (Sri Lanka), Kuala Lumpur (Malaysia)
Dhaka (Bangladesh)	Colombo (Sri Lanka), Penang (Malaysia), Phnom Penh (Cambodia), Makati (Manila, Philippines)
Colombo (Sri Lanka)	Bangkok (Thailand), Kuala Lumpur (Malaysia), Makati (Manila, Philippines)
Banda Aceh (Indonesia)	Yokohama (Japan)
Hanoi (Vietnam)	Yokohama (Japan)
Hue (Vietnam)	Bangkok (Thailand), Yokohama (Japan)
Phnom Penh (Cambodia)	Makati (Manila, Philippines)
Makati (Manila, Philippines)	Seoul (Korea)
Incheon (Korea)	Yokohama (Japan)

In the case of ICLEI Southeast Asia's programme of Cities for Climate Protection (CCP), Baguio studied bio-fuel utilisation for climate change mitigation from Chiang Mai (Thailand) and Naga learned about organic fertiliser production from waste in a partnership with Tungsong (Thailand). Records of cities' participation in network events imply frequent mutual learning among Baguio, Cebu, Bohol Province, Naga and Puerto Princesa. Among these cities, Baguio, Naga and Puerto Princesa are reference cities for the other cities. These intercity relations are shown in Table 9. Mutual reference and learning between cities in developing countries are also observed in the case of ICLEI Southeast Asia.

Table 9 State of intercity mutual reference (ICLEI Southeast Asia)

Cities referring to other cities	Cities referred to by other cities
Baguio (Philippines)	Chang Mai (Thailand)
Naga (Philippines)	Tungsong (Thailand), Baguio (Philippines), Puerto Princesa (Philippines)
Cebu (Philippines)	Baguio (Philippines), Naga (Philippines), Puerto Princesa (Philippines)
Puerto Princesa (Philippines)	Baguio (Philippines)
Bohol Province (Philippines)	Cebu (Philippines), Puerto Princesa (Philippines)

In the case of the Kitakyushu Initiative, relationships have developed through the conduct of technical co-operation with the dispatch of experts and training courses between Kitakyushu and Dalian (China), Kitakyushu and Surabaya, Kitakyushu and Kathmandu (Nepal), Nonthaburi and Dhaka, Ulsan (Korea) and Kathmandu, through network exchanges and mediation by the UNESCAP, the sponsor of the network, and the Institute for Global Environmental Strategies (IGES), the network secretariat. In addition, information collection between cities is also being carried out, as seen in the case of Bago (Philippines) which has been collecting information regarding waste treatment, in particular composting and recycling, from Surabaya and Bangkok. The record of cities' participation in network events also implies active bilateral referencing among Kitakyushu, Surabaya, Nonthaburi, Dhaka, Weihai and Bangkok. Among these cities, Kitakyushu, Surabaya, Nonthaburi, and Bangkok played the roles of reference cities. These cases are illustrated in Table 10. The table shows that cities in developing countries focus on learning from cities in other developing countries rather than from Japanese or Korean cities, at least in this network.

Table 10 State of intercity mutual reference (Kitakyushu Initiative)

Cities referring to other cities	Cities referred to by other cities
Kathmandu (Nepal)	Kitakyushu (Japan), Ulsan (Korea)
Dhaka (Bangladesh)	Kitakyushu (Japan), Nothaburi (Thailand)
Bangkok (Thailand)	Kitakyushu (Japan), Surabaya (Indonesia)
Siem Reap (Cambodia)	Surabaya (Indonesia)
Nonthaburi (Thailand)	Kitakyushu (Japan), Surabaya (Indonesia)
Sibu (Malaysia)	Kitakyushu (Japan), Surabaya (Indonesia)
Bago (Philippines)	Surabaya (Indonesia), Bangkok (Thailand)
Surabaya (Indonesia)	Kitakyushu (Japan)
Weihai (China)	Ube (Japan), Surabaya (Indonesia), Beijing (China)
Dalian (China)	Kitakyushu (Japan)

5. Cities' perception of effects of intercity network programmes: The Kitakyushu Initiative

A survey of cities participating in the Kitakyushu Initiative provides some additional subjective evidence regarding whether the network facilitates mutual learning[11]. This survey focused on cities' perceptions of the effects of participating in the network, which is related to mutual learning. This significance of this survey should not be overstated, since a limited number of cities participated, and there might be additional effects of the network that were not clearly recognized by participating cities. Cities' subjective assessment of network effects also tends to be considered in light of each city's cost of participation. Nevertheless, despite these limitations, the survey does indicate that the cities that participated in the survey generally felt that the network contributed to mutual learning.

Specifically, participating cities cited the following direct effects of participating in the network: 1) construction of facilities or implementation of technical co-operation projects with financial assistance from international organisations, 2) opportunities to build capacity of staff through participation in study tours and seminars, and 3) expenses borne by the secretariat

enabled participation in these seminars and programmes. With regard to indirect effects of participation in the network, the following were cited: 4) increasing the recognition of the importance of environmental protection within the city, improving the position of environmental protection departments and appealing the importance of establishing departments in charge of the environment, 5) opportunities to solicit financial and technical support and intercity co-operation from overseas, and 6) sharing information about successful practices from other cities within the city office for use in staff training and environmental education. Though there are differences in the perceptions of local government officials about direct and indirect effects of participation in networks, economic effects, such as in 1), 3), and 5) were typically cited first, and effects of capacity building, as indicated in 2) and 6), were also emphasised.

6. Financial resources and mutual reference

The extent of mutual reference and learning through intercity network programmes should be assessed in the context of the availability of financial resources. Among the different modes of international co-operation for development, intercity network programmes are mainly categorised as small-scale technical co-operation with limited support of professional development experts and consultants. Intercity network programmes do not usually have large sources of external financial assistance such as soft loans or grants. Programmes typically use local government officials themselves as resources to develop the capacity of local governments which are engaged in the programme, even if the cost of dispatching officials and hosting seminars and training sessions are sometimes borne by international development agencies. One example is CITYNET's AWAREE and post-AWAREE projects, which focus on intercity co-operation on environmental education supported by JICA. These are grass-roots projects, whose budgets are smaller than typical technical co-operation projects under JICA, and the available external financial and technical support is not very large.

Table 11 summarises the role of national governments and international organisations for the three Asian international intercity network programmes for the environment. One program, the Kitakyushu Initiative, receives financial support from both the Japanese national government and international organizations for both secretariat work as well as project-based activities. The other two network programmes also rely on national governments and international organizations for financial support for some project-based activities, but not for secretariat work. This indicates that the membership fees and other in-kind resource contributions by participating cities are not enough to solely finance all the network programme activities.

Table 11 Roles of national governments and international organisations

Network programme	Initiation	Funding for secretariat work	Funding project-based activities
CITYNET	UNESCAP facilitated	None	UNDP, JICA supported
ICLEI SE Asia	None	None	USAID, CIDA, ADB, EU supported
Kitakyushu Initiative	UNESCAP, Japanese government facilitated.	Japanese government supported	UNESCAP supported

Although it is difficult to get concrete data on financing, it is generally recognised that the overall amount available from all sources, including support from national governments and international organizations, as well as membership fees and contributions from member cities, is not very large. For example, the amount of financial support provided by the Kitakyushu Initiative to demonstration projects ranged from USD 30,000 to 100,000 for one project, shown in Table 5. In addition, the budget of the secretariat work for Kitakyushu Initiative is estimated at no more than a few hundred thousand US dollars[12].

This limitation of a rather small amount of resources devoted to the intercity network programmes naturally leads to modest expectations regarding results. In particular, tangible improvements in environmental quality may be small. This limitation is found even in the successful cases such as CCP under ICLEI Southeast Asia, where practices were diffused through network and actually adopted. The amount of reduction of GHG emissions in member cities that implemented the new practices within the ICLEI CCP programme in fact is not very large. For example, the estimated annual reductions of GHG emissions resulting from implementing the streetlight energy efficiency CCP programme in Naga city of the Philippines is 220 eCO_2 tonnes[13]. In contrast, ADB's developmental loan for the national residential lighting programme in the Philippines with a budget of 18 million USD is expected to reduce annual eCO2 emissions by 300,000 eCO_2 tonnes[14].

This paper has demonstrated that even under the current level of limited financing for intercity network programmes, mutual reference still takes place. Of course, in general, policy and practice adoption by local governments could come from any number of sources, and the success of adoption and diffusion of policies and practices is determined by many factors. This

paper demonstrates that international intercity networks can play a role in some circumstances. Several cities utilised the intercity network programmes as a tool for mutual reference, mutual learning, and in some cases, practice adoption, as well as to obtain external resources – both financial and technical – from external peer local governments and international development agencies. Moreover, it should not be underestimated that it is important for local governments to obtain appropriate knowledge and experiences at different stages of problem identification and solving in policy processes. Johnson and Wilson (2009) claim that a practitioner-to-practitioner partnership between a city in a developing country and a city in a developed country has an impact on personal and professional learning even for participants from a developed country. Limited availability and scale of finance may affect the significance of the concrete results of network programmes, but mutual reference and learning can nevertheless occur.

7. Conclusion

International intercity networks in Asia have achieved some modest results in terms of mutual reference and learning among participating cities. This study shows evidence of activities in financial and technical co-operation, capacity building activities, domestic institutional development and promotion of bilateral intercity co-operation. In addition, the data show that most member cities participate in network activities with reasonable frequency, and some very frequently. This implies that the network programs have achieved a certain level of effectiveness since the cities would not participate if they did not perceive any value in the networks. The records of bi-lateral city-to-city co-operation and attendance of network capacity development events imply the occurrence of mutual reference and learning regarding specific environment-related practices among cities. Moreover, mutual learning occurs not only between cities in developing and developed countries, but also between cities in developing countries. The survey results confirm that cities actually see some benefits of participating in intercity network programmes. Mutual reference and learning are taking place regardless of rather limited financial resources used for intercity network programmes. Therefore, it can be concluded that international intercity network programmes for the environment in Asia have achieved a reasonable, though not dramatic, amount of mutual learning among some active participating cities, given the resources that have been mobilised.

The international intercity network programme also led to co-operation among cities in developing countries, even if it has been led by a city in a developed country, as is the case for Kitakyushu Initiative and CITYNET. Occurrence of mutual reference is also demonstrated by

the survey results of the PLUS network (Partners for Long-term Urban Sustainability), a network of over 40 cities from developed countries such as Canada as well as several developing countries, which illustrates the role of intercity networks as sources of information exchange (Seymoar, Mullard, and Winstanley 2009).

It is desirable that national governments and international organisations maintain their support of intercity network programmes to maintain the current level of mutual reference and learning, since the costs are not very high, and a certain amount of achievement of mutual learning is observed. Current levels of funding are not necessarily secure, and in the case of Japan, funding from the national government is typically made on an annual basis or at most three to five year project periods. Private foundations could support mutual learning among cities as well. If the intercity network could incorporate the interests of environmental businesses, there would also be a possibility to obtain support from private companies.

Although the current rate of participation may be considered reasonable, it could be further increased by additional small amounts of financial support from national governments in developed countries or international organisations. This would be especially useful to increase the participation of cities which have more severe financial constraints in both developed and developing countries, although in-kind contributions by participating cities are also important to promote a sense of ownership by local governments. In particular, when there is a sound screening process of funding, additional external funding may not necessarily detract from network effectiveness such as mutual reference and learning. Especially to support South-South intercity co-operation, additional modest financial support by national governments and international organisations may be beneficial, though there needs to be careful consideration to avoid discouraging the sense of self-reliance by participating cities. The secretariat of a network programme could also assist fund raising for new activities. Since Japanese major cities might competing as well as cooperating with each other, they may want to create and maintain their own international intercity networks rather than to work for one network. In reality, however, CITYNET and the Kitakyushu Initiative, which have been managed mainly by the cities of Yokohama and Kitakyushu respectively, have achieved mutual reference and learning within their intercity networks. Though co-operation between intercity networks would be desirable when additional funding is sought, it is not a necessary condition to realise mutual reference.

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[1] See Tjandradewi and Marcotullio (2009), Tjandradewi, Marcotullio and Kidokoro (2006), and UNDP (2000), for example.
[2] Maeda (2008).
[3] Other similar network programmes in Asia include a) Clean Air Initiative for Asian Cities (CAI-Asia), b) Southeast Asia Urban Environment Management Application (SEA-UEMA) Project, c) a joint project on environment of Asian Network of Major Cities 21 (ANMC21), d) the environment committee of the Organization for the East Asia Economic Development hosted by Kitakyushu city, e) Asian Environmental Co-operation City Network also hosted by Kitakyushu city, f) Three Cities Environment Conference hosted by Niigata city of Japan, and g) 20% Club for Sustainable Cities hosted by Kanagawa prefecture of Japan.
[4] The websites of these networks are as follows: CITYNET: http://www.citynet-ap.org/En/user/home/home.php, ICLEI: http://www.iclei.org/index.php?id=586, Kitakyushu Initiative: http://www.iges.or.jp/kitakyushu/; accessed 23 February 2008.
[5] ICLEI is a worldwide network, however, for the study purpose the focus is on ICLEI Southeast Asia, which is under the ICLEI global network.
[6] ICLEI Southeast Asia started its operation in the Philippines 1996 and extended to Indonesia and Thailand in 2002.
[7] Sectors other than the environment handled by CITYNET include poverty reduction, urban development, information and communication technology, and disaster prevention and management (CITYNET Annual Report 2007).
[8] From the websites of each network programme
[9] From the websites of each network programme.
[10] For example, 12 cities attended the network events of CITYNET at least for 11 times during the 22 years of network operation.
[11] Questionnaires were issued to 17 cities participating in the Fourth Meeting of the Kitakyushu Initiative Network held in June 2007 and implemented from September to December 2007 as a part of follow-up activities by the secretariat. Of those cities, eight responded. Respondents included Weihai (China), Sibu (Malaysia), Kathmandu (Nepal), Bago (Philippines), Bangkok (Thailand), Dhaka (Bangladesh), Ulaanbaatar (Mongolia), and Siem Reap (Cambodia).
[12] Interview with the secretariat of Kitakyushu Initiative for a Clean Environment, 27 February 2010.
[13] Aquitania (2008).
[14] Asian Development Bank (2009).