Lessons Learnt from Regional Intercity Networking

– To Promote Sustainable Cities in Asia –

Institute for Global Environmental Strategies

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Preface

Actions at the local level are recognised as increasingly important for sustainable development in Asia. The Environment Ministers Meeting of ASEAN + 6 has identified the promotion of Environmentally Sustainable Cities (ESC) as a priority. International intercity network programmes are believed to have significant potential to promote sustainable cities in Asia, but how this potential could be realised is not yet clear. There are several existing international intercity network programmes to deal with environmental issues in Asia. It is important to pause to consider lessons from existing networks and other forms of international intercity cooperation. While existing networks have demonstrated certain usefulness, there are some concerns that they have not necessarily addressed properly.

This report, therefore, aims to show the lessons from the existing regional intercity networks for sustainable cities in Asia. Furthermore, it seeks to present ideas on how to develop and utilise the existing networks more effectively so that local governments in Asian developing countries and Japan could harness the opportunities. In addition, the report makes some suggestions for international organisations and national governments on how they can support intercity networks.

The lessons from past experiences in Asia provide us some insights on their effectiveness and how to improve regional intercity networking. A review reveals that the network contributed to the mutual reference and learning of environmental policies and experiences among participating cities. Mayoral support, as well as coordination and networking by individuals and organisations within or outside the local governments, facilitates practice adoption and diffusion through an international network. The secretariat of a regional network could improve the outcome such as mutual learning and business development by properly understanding the particular needs of participating cities; providing them with useful opportunities; and nurturing ownership and commitment. The secretariat can also develop mechanisms to diffuse good practices on the network by collaborating with various stakeholders other than the participating local governments.

The basis of this report is a study implemented from June 2007 to March 2011 as a sub-theme , "Platform on scenarios for sustainable cities and sustainability policy and technology in East Asia," as part of a broader study entitled "Design and evaluation

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Executive Summary

This report aims to show the lessons learnt from the regional intercity networks on policies and technologies for sustainable cities in Asia. Furthermore, it seeks to present ideas on how to develop and utilise the networks more effectively so that local governments in Asian developing countries and Japan as well as network secretariats could harness the opportunities. The report also mentions the ideas on how international organizations and national governments could support intercity networks.

A network is an intercity relationship—a gathering of stakeholders on sustainability policies and technologies from cities in various countries, which is maintained through meetings and Internet communications. In some cases, the network is institutionalised. It is often implied that network activities can help to realise outcomes which cannot be achieved by one city alone. Examples of networks in Asia include CITYNET, ICLEI-Local Governments for Sustainability, Kitakyushu Initiative for a Clean Environment, and the Asia-Pacific Eco-business Forum.

The objectives of international networks for sustainable cities are as follows: To develop joint international projects among stakeholders, such as starting new businesses and joint research; to develop new polices, products, and knowledge, including knowledge creation through joint research and development; to gain knowledge, and learn policies and practices (diffusion; dissemination, and transfer of knowledge); and to promote or increase the presence of the city. The participants in networks include local governments, corporate entities, research institutions, and potentially, civil society organisations. The activities of international networks for sustainable cities potentially would include networking and advocacy, research and study, assistance in the formulation of plans and strategies, project implementation, and capacity development. The institutions and organisations of the international networks range from formal networks with secretariats to ad hoc relationships without secretariats to serve as permanent coordinators between members. Some networks are operated in the form of city-to-city cooperation, while others are multilateral.

The lessons generated by the past experience of international networks for sustainable cities in Asia provide us some insight on their effectiveness and how they could be improved. A review of several international networks in the region reveals that the network did result in mutual reference and learning of environmental policies and

experiences among participating cities (Nakamura et al., 2010; Seymoar et al., 2009). Mayoral support, as well as coordination and networking by individuals and organisations within or outside the local governments, promotes practice adoption and diffusion through an international network. On one hand, local governments in developing countries have been able to obtain funds and develop the capacity of their officials by participating in international networks. On the other hand, Japanese local governments that have been engaged in international environmental cooperation are motivated by the environment-related business opportunities for local companies, in addition to a desire to support national policy on international cooperation.

The secretariat of an international network could improve the results by properly understanding the particular needs of participating cities; providing them with useful opportunities; and nurturing ownership and commitment through calls for proposals, requests for action planning, and monitoring during the network activities. The network secretariat can also develop a mechanism to diffuse good practices on the network by collaborating with various stakeholders, such as local NGOs, national governments, and donors, other than the participating local governments. Official assignment of local coordinators or focal points in participating cities ensures the efficient and effective coordination within local governments to execute activities related to the international network. By involving local research institutes in the international network, their baseline studies, policy options development, action planning, and stakeholder engagement can assist local governments in formulating and implementing policies, programmes, and projects targeted for the network.

Regarding the formulation and management of the international network, a step-by-step approach is recommended—from nurturing its relationships to organizing, institutionalising, and maintaining it. When formulating new programmes and activities, it would be better to consider complementary collaboration among existing international networks, as programmes have to be adapted to the different needs of participating cities with different background. The mutual benefit of participating cities must be ensured for the sustainable operation of the network. Transparent and effective communication and participation in decision making evokes a sense of ownership, thereby improving the outcome of the network. It is desirable that national governments extend institutional assistance for the international network. Also, the network for sustainable cities in Asia should seek further collaboration with international development agencies for grants and investment opportunities.

Contents

1. Introduction and background

The urban population is growing, as people continue to flock to urban centres. According to the United Nations, the population of Asia stood at 4.9 billion in 2004, of which 2.7 billion (55 %) will live in urban areas by 2030 (United Nations 2004). The urban population is expected to increase by 44 million annually over the next 25 years (Asian Development Bank 2008). Cities spawn environmental problems, such as the generation of large amount of solid waste and air pollution, yet the solutions to the same problems are also found in cities. Local initiatives have resulted in advances toward sustainability and more initiatives are expected in Asia. For example, in preparation for the 2008 Olympics, which it was hosting, Beijing strove to improve air quality by reducing coal consumption and using solar energy to produce electricity and pool heating. The city government of Rizhao, China, has become famous for promoting the use of solar energy for residential water heaters, traffic signals, and streetlights (Worldwatch Institute 2007).

The Cities Development Initiative for Asia (CDIA) of the Asian Development Bank (ADB) and Eco2Cities (Ecological Cities as Economic Cities) of the World Bank have launched programmes for the sustainable development of cities worldwide. CDIA is a joint initiative of ADB, the German government, and other donors to assist medium-sized Asian cities in filling the gap between their development plans and infrastructure investment pertaining to urban environment improvement, poverty reduction, and climate change mitigation and adaptation. CDIA supports the identification and development of urban investment projects through pre-feasibility studies.

Eco2Citiies is a new programme of the World Bank to help cities in developing countries to achieve ecological and economic sustainability. The programme provides the cities with the analytical and operational frameworks to achieve their sustainability targets (World Bank). Eco2Cities provides a report on the framework, a city-based decision support system, and case studies. The World Bank plans to support pilot cities through capacity building and the alignment of World Bank financial instruments, with the aim of scaling up partnerships with national governments (Suzuki 2009).

The High Level Seminar on Environmentally Sustainable Cities (ESC), held in March 2010 in conjunction with the East Asia Summit Environment Minister Meeting in Jakarta, Indonesia, also confirmed that the formation of ESC was a priority agenda in Asia. It

recommended that national governments' support to intercity networks should be strengthened in the region.[1] Therefore, it is relevant and significant to understand and strengthen international network for sustainable cities in Asia.

This policy report aims to show the lessons learnt from the existing regional intercity networks on for sustainable cities in Asia. It also seeks to present ideas on how to develop and utilise a network or networks more effectively so that local governments in Asian developing countries and Japan could harness the opportunities. It also seeks to provide the strategy for network secretariats and international organisations to materialise the potential of intercity networks for sustainable cities.

To further promote local initiatives for sustainable cities, several international networks or networks have been constructed to facilitate their collaborative actions. What, then, can international city networks do to promote the development of sustainable cities? Can a network enhance the individual actions of cities toward sustainability? If the answer to the second question is yes, under what conditions and how will networks work well?

We could also ask what the strengths and weaknesses of international city networks are vis-à-vis several potential objectives, such as knowledge generation and dissemination, capacity development, stakeholder advocacy, and the development of business opportunities. The strengths of international city networks may include the diffusion of information, knowledge, practices, and policies among members and the creation of new knowledge and practices.

To explore these issues, an international network for sustainable should first be defined. Following are the broad characteristics of the international network, as discussed in this policy report:

・ International intercity networks or relations of stakeholders from several countries involved in the policies and technologies relating to the sustainability of cities, generated and maintained by meetings attended by the stakeholders, and sometimes, also by internet communication
・ Could be institutionalized in the form of programmes

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[1] High Level Seminar on Environmentally Sustainable Cities, 2-4 March 2010, Chair's Summary.
http://www.hls-esc.org/1st_HLS_ESC/HLS_ChairsSummary_final.pdf

- A basis or common foundation for developing new collaborative relations, actions, policies, products, knowledge, and so on, among participating actors, which could help promote sustainable cities
- Some new benefits for the participants resulting from the network—an anticipated positive externality from the network, as exemplified by some intercity networks and the study on knowledge networks ("Together, we can do more [CITYNET]" and "Total is bigger and better than sum of individuals [Creech and Willard 2001]").

Examples of regional intercity networks for sustainable cities are the Asia-Pacific Eco business Forum, CITYNET, International Council for Local Environmental Initiatives (ICLEI), and the Kitakyushu Initiative for a Clean Environment (hereinafter referred to as Kitakyushu Initiative). The Clean Air Initiative for Asian Cities (CAI-Asia) and CDIA surveyed 14 organisations that either have Asian cities in their networks or work closely with city networks. The survey showed that 11 organisations focus on urban development, such as urban planning and governance, and 10 of them also deal with the urban environment, such as solid waste management and climate change adaptation and mitigation (CAI-Asia and CDIA 2009). The survey found that all the organisations provide technical assistance to participating cities, and around half of them fund cities through grants. Network activities include networking and advocacy, research, assistance in the formulation of plans and strategies, project implementation, and capacity development. Most of the networks are funded by donors, and in some cases, by membership dues (CAI-Asia and CDIA 2009).

2. Objectives, actors, activities, and institutions

In this section, the general features of a regional intercity network are explained; that is, including the objectives, actors, activities, and institutions of the network.

The objectives of the international network for sustainable cities potentially include the following though any one network does not necessarily have all of them:

- To develop joint international projects among stakeholders, such as business start-ups and joint research
- To develop new polices, products, and knowledge, including knowledge creation through joint research and development
- To gain knowledge and learn policies and practices: diffusion; dissemination and

transfer of knowledge

・ To promote the city or increase the presence of the city

The participants in the network are in most cases:

・ Local governments, corporate entities, and research institutions
・ Civil society organisations

The activities of the network include:

・ Networking and advocacy
・ Research and study
・ Assistance in the formulation of plans and strategies
・ Project implementation
・ Capacity development

Lastly, the institutions and organisations of the network have several patterns. The institutions and organisations of the network range from formal networks with secretariats to ad-hoc relationships without secretariats to serve as permanent coordinators among members. Some networks are operated in the form of bilateral cooperation called city-to-city (C2C) cooperation, or twinning, while others are multilateral.

3. Lessons learnt from experiences

3.1. From existing Asian intercity network programmes for the environment: CITYNET, ICLEI, Kitakyushu Initiative, CAI-Asia, and others

This subsection introduces several international intercity network programmes for the environment and discusses their institutional settings. The programmes used as examples include those with secretariats. The achievements of mutual reference through the activities under these network programmes, as well as the enabling factors for the local governments' adoption and diffusion of practices through the intercity network, are presented. The motivations and incentives for cities to participate in and utilise network programmes are analysed and the expected and actual benefits of participation are discussed.

3.1.1 Introduction to existing networks[2]

Four international environmental cooperation networks that focus on environmental management and have city governments in East Asia for main actors in the network are presented below as examples of international intercity network programmes:[3]

・ Kitakyushu Initiative for a Clean Environment (Kitakyushu Initiative)
・ Clean Air Initiative for Asian Cities (CAI-Asia)
・ International Council for Local Environmental Initiatives (ICLEI)[4]
・ CITYNET

The Kitakyushu Initiative, CAI-Asia, ICLEI, and CITYNET, all work towards a common goal—environmental improvement and sustainable development—and they engage in international collaboration on local activities for the purpose of improving capacity. The Kitakyushu Initiative, CAI-Asia, ICLEI, and CITYNET started activities in 2000, 2001, 1990, and 1987, respectively.

The Kitakyushu Initiative, ICLEI, and CITYNET 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 as cooperating organisations or associated members. In the case of CAI-Asia, the activities of different levels of stakeholders, including organisations other than local governments, are included. Local governments from developed countries do not participate in CAI-Asia.

The local governments that participate in these networks do not include all pertinent municipalities in all countries. Rather, most of them are the local governments that are trying out advanced approaches to environmental protection. Under the Kitakyushu Initiative, it was first decided that the participation of local governments would depend upon the recommendation of participating national governments at the Ministerial Conference for Environment and Development in Asia and the Pacific (MCED). Later on, however, local governments that indicated interest were being added without national

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[2] Based on Nakamura et al. (2010).
[3] Kitakyushu Initiative: http://www.iges.or.jp/kitakyushu/, CAI-Asia: http://www.cleanairnet.org/caiasia/1412/channel.html, ICLEI: http://www.iclei.org/index.php?id=586, CITYNET: http://www.citynet-ap.org/En/user/home/home.php.
[4] ICLEI is a worldwide network; however, this report focused on ICLEI Southeast Asia, which is under the ICLEI global network.

government recommendation. In ICLEI, CAI-Asia, and CITYNET, local governmental participation is independent.

In all cases, activities gain the support of international development agencies, and pilot/demonstration projects are implemented with support from donors. Local governments from developed countries that participate in these networks are viewed as cooperating actors, and there are cases of local governmental cooperation in which co-operative activities have been carried out with cities in developing countries (CITYNET and Kitakyushu Initiative). In addition, ICLEI and CITYNET collect fees from participating local governments and carry out activities with external support.

The specific activities and support tools for building the capacity of the four international networks include face-to-face (meetings to share knowledge and experiences, seminars/workshops, training, study tours, and the dispatch of experts/consultation), documentation (creation of successful practice databases, development and sale of case study compendiums, implementation of research and studies, development and sale of reports and manuals, etc.), and online materials (publication of documents and workshop materials on websites and provision of activity support tools).

The activities of the four networks are shown in Table 1. All networks provide financial and technical cooperation and carry out capacity-building activities, but only some promote support for the creation of domestic systems and local governmental cooperation. Support for the creation of domestic networks for sustainable cities is carried out by CAI-Asia and CITYNET, while the Kitakyushu Initiative and CITYNET promote cooperation between local governments. The details of the activities of each network are provided in Tables 2 to 5.[5]

Table 1 Types of activities of the four international intercity networks for the environment

Activity area	Kitakyushu Initiative	CAI-Asia	ICLEI	CITYNET
Financial and technical cooperation	√	√	√	√
Capacity-building activities	√	√	√	√
Domestic institutional development		√		√
Promotion of bilateral intercity cooperation	√			√

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[5] From the websites of each network program

The Kitakyushu Initiative has achieved results in demonstration projects utilising financial and technical cooperation. The United Nations has provided USD 3,000–10,000 for carrying out project pilot studies on urban environmental issues, guidance by experts, procurement of required materials and equipment, and holding seminars. In addition to the organisation of thematic seminars and study tours, the Kitakyushu Initiative also offers a database on the Internet as a capacity-building activity. Cooperation between cities is also mediated by the secretariat (refer to Table 2).

Table 2 Kitakyushu Initiative activities

Activity area	Detailed contents
Financial and technical cooperation	Demonstration projects (financial assistance of USD 3,000–10,000 for cities participating in the network from the United Nations Economic and Social Commission for Asia and the Pacific—the main organizer of the Kitakyushu Initiative—to apply new measures in air, water, waste, energy, and other areas. The financial assistance is used for project development studies, guidance from experts, procurement of necessary equipment, and conduct of seminars. Eleven projects were implemented, complemented by financial support from the cities concerned.)
Capacity-building activities	Network meetings to share knowledge and experience Thematic seminars Study tours Studies and research conducted by the secretariat on specific topics Creation of a database on successful practices Uploading of documents and workshop materials on website Publication of newsletters
Promotion of bilateral intercity cooperation	Cooperation mediation by the secretariat

In CAI-Asia, financial and technical cooperation was used to carry out pilot projects, with the focus on studies, with support from international development organisations such as the Asian Development Bank (ADB). In addition to the development of training manuals and country-specific integrated reports on urban air quality management, CAI-Asia posts reference documents on its website and manages an online discussion forum

(listserv) as part of its capacity-building activities. In addition, it provides support for the development of domestic networks with exclusive secretariats (Local Networks) (refer to Table 3).

Table 3 CAI-Asia activities

Activity area	Details
Financial and technical cooperation	Pilot projects (studies on air pollution and health effects, with financial assistance from the ADB and health damage research labs [total: USD 800,000]; studies on investment planning formation for sustainable transportation, with financial assistance from the Swedish International Development Agency [SIDA] and the ADB; technical cooperation to reduce air pollution by using diesel vehicles, with financial assistance from the World Bank and the United States Agency for International Development [USAID]; etc.)
Capacity-building activities	Workshops/policy forums Training courses Development of training manuals, air quality improvement projects/study compendiums, integrated reports on urban air quality management by country, etc. Uploading of documents and workshop materials on the website Online discussion forum (listserv) (mailing list)
National support system	Support for the development of domestic networks with exclusive secretariats (Local Networks)

ICLEI Southeast Asia promotes financial and technical cooperation for projects that introduce climate protection measures in the fields of renewable energy, transportation, energy efficiency, and solid waste. Support comes from the United States Agency for International Development (USAID) and others. ICLEI also conducts capacity-building activities such as the development of databases for workshops and successful practices and the provision of support tools through the Internet (refer to Table 4).

Table 4 ICLEI activities

Activity area	Details
Financial and technical cooperation	Capacity improvement project for local governments using urban environmental management tools (Supporting organisation: European Union)

Activity area	Details
	Project on stakeholder evaluation and adoption of agendas for integrated water management (ADB)
	Project on the introduction of measures for climate protection in the fields of renewable energy, transportation, energy efficiency, and waste (USAID), Canadian International Development Agency (CIDA), and others
Capacity-building activities	Workshops
	Creation of database on successful practices
	Provision of activity support tools on the website
	Publication of newsletters

In addition to its technical cooperation projects for environmental education that are supported by the Japan International Cooperation Agency (JICA) and Yokohama, CITYNET also conducts capacity-building activities through training courses, the dispatch of experts, and the provision of materials on its website. Moreover, CITYNET assists in the development of domestic network programmes (National Chapters). Its secretariat also mediates cooperation between cities on the Web (refer to Table 5).

Table 5 CITYNET activities

Activity area	Details
Financial and technical cooperation	Tsunami Reconstruction Support Project, with support from Yokohama, which is CITYNET's sponsoring city
	Environmental education and technology cooperation project, with support from 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
	Uploading of documents and workshop materials on the website
	Publication of newsletters
National support system	Support for the development of national networks and programmes (National Chapters)
Promotion of	Cooperation mediation by the secretariat

Activity area	Details
bilateral intercity cooperation	Information disclosure on the website of each city's needs and resources, and matching for potential city-to-city cooperation

3.1.2 Effectiveness of mutual learning

The evidence demonstrates that three networks—CITYNET, ICLEI Southeast Asia, and Kitakyushu Initiative—did contribute to the formulation of additional bilateral intercity relationships, which suggests that the network has developed to a more mature stage.[6] In the case of CITYNET, the secretariat has facilitated bilateral cooperation relationships between the following cities: Yokohama and Banda Aceh (Indonesia), Hue (Vietnam), Hanoi (Vietnam), Incheon (Korea), and Phnom Penh (Cambodia); Penang (Malaysia) and Dhaka (Bangladesh); Bangkok (Thailand) and Hue (Vietnam); and Seoul (Korea) and Makati (Philippines). Cooperation came in the form of study tours, feasibility studies, on-the-job training, exchange 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 between several cities that have often participated in the same events; specifically Colombo (Sri Lanka), Dhaka, Kuala Lumpur (Malaysia), Makati, and Bangkok (Thailand). Mutual reference between three of these cities in particular (Colombo, Dhaka, and Makati) is considered literally mutual, in that the cities acquire and supply knowledge in both directions.[7] Reciprocal reference is considered to be essentially the development of another intercity network. Table 6 shows the directions of mutual reference between cities, based on the records of bilateral intercity cooperation and of the frequent joint participation of six cities in network events. This table shows which cities learnt certain environmental policies or measures, or received specific environmental cooperation support from which reference city or cities.

Table 6 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)

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[6] Based on Nakamura et al. (2010).
[7] The cities that participated in the network events were identified based on the participant lists for each event of each network, and the frequency of participation was calculated.

Dhaka (Bangladesh)	Colombo (Sri Lanka), Penang (Malaysia), Phnom Penh (Cambodia), Makati (Philippines)
Colombo (Sri Lanka)	Bangkok (Thailand), Kuala Lumpur (Malaysia), Makati (Philippines)
Banda Aceh (Indonesia)	Yokohama (Japan)
Hanoi (Vietnam)	Yokohama (Japan)
Hue (Vietnam)	Bangkok (Thailand), Yokohama (Japan)
Phnom Penh (Cambodia)	Makati (Philippines)
Makati (Philippines)	Seoul (Korea)
Incheon (Korea)	Yokohama (Japan)

Under ICLEI Southeast Asia's programme of Cities for Climate Protection (CCP), Baguio (Philippines) studied biofuel utilization for climate change mitigation from Chiang Mai (Thailand), and Naga (Philippines) learnt about the production of organic fertilizer from waste in partnership with Tungsong (Thailand). Records of cities' participation in network events imply frequent mutual learning between Baguio, Cebu (Philippines), Bohol Province (Philippines), Naga, and Puerto Princesa (Philippines). Of the group, Baguio, Naga, and Puerto Princesa are reference cities for the other cities. The intercity relations are shown in Table 7.

Table 7 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 Kitakyushu Initiative, relationships have developed through technical cooperation, with the dispatch of experts and conduct of training courses between Kitakyushu and Dalian (China), Kitakyushu and Surabaya (Indonesia), Kitakyushu and Kathmandu (Nepal), Nonthaburi (Thailand) and Dhaka, and 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 is being collected between cities. Bago (Philippines), for example, has been gathering information on waste treatment, particularly 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 (China), and Bangkok. Among these cities, ones which were referred to included Kitakyushu, Surabaya, Nonthaburi, and Bangkok. These cases are illustrated in Table 8.

Table 8 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), Nonthaburi (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)

The Partners in Long-Term Urban Sustainability (PLUS) network is another example of a network which has been effectively utilised by local governments for learning. PLUS

conducted a survey among the cities in its network, and the following items were identified as the key success factors for intercity collaboration:[8]

- *When faced with problems, over three-quarters of the respondents turn to their peer group—colleagues they know in other cities.*
- *Conferences and learning events are one of the best sources of new ideas.*
- *The Internet is a common source of information, particularly for case studies and best practices.*
- *The least likely sources of information or guidance to be used are academic institutions, professional organizations, journals, or mentors.*
- *Most cities do not have conscious learning processes established or institutionalized.*
- *Learning does not occur evenly throughout an organisation—those people who participate in conferences or peer exchanges get greater exposure to innovative ideas, but they are not usually able to ensure a systematic transfer of that knowledge. Often, these people are leaders and are motivated to attend conferences in order to keep furthering their personal and professional learning.*
- *Knowledge storage or corporate memory is not formally organized or captured by the vast majority of the cities in the survey. Some of the best ways to learn are by experimentation (doing), attending conferences and events that provide opportunities for direct face-to-face sharing, presenting at conferences, attending City Council meetings, and presenting at team/department meetings.*
- *Learning from other cities, particularly those of a similar size, is important; through networks or professional colleagues, many cities reach out to other cities for information.*
- *Although there is competition between cities to achieve social, economic, and environmental prosperity, sharing occurs extensively in informal and formal channels (often by request) and through networks, so that people become exposed to new ideas and become more collaborative with peers from other cities.*
- *Barriers to learning are largely related to time, funding, lack of human resources, heavy workloads, and daily pressures.*
- *While sustainability may be common parlance, there is significant complacency within and across departments. It requires dedicated staff and self motivation to keep the vision clear and tangible.*
- *Leadership on sustainability is a large motivator for learning and doing. Being guided by a vision and strong leadership makes the process smoother. Peer exchanges and biennial conferences are the most useful learning opportunities within the PLUS Network. However, other activities, such as web dialogues, newsletters, and the website, are also helpful.*
- *The open, flexible, positive attitude of staff members is important in creating a safe space for sharing and learning.*
- *Cities copy other cities. There is widespread evidence in the Network of ideas and whole programs being transferred from one city to another. For example, "Imagine Calgary" led to "Imagine Durban" and other participatory visioning processes in Saint John, Iqaluit, and Regina, and has inspired similar process that will be undertaken in Olympia, Ottawa/Gatineau, and the National Capital Region. Peer exchanges allow cities to showcase their planning and demonstration projects so others can copy the strategies and ideas. Copying ideas is a celebration of a success and cities are proud to share their accomplishments and guide others through the processes.*

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[8] Seymoar et al. *(*2009), 18-9.

These findings show that learning from peers in other cities through intercity network programmes is recognized as an effective way for local government officials to exert daily efforts at sustainability. In particular, face-to-face communication is considered useful, apart from web dialogues, newsletters, and information provided on the website, which are comparatively cheaper. Mutual learning across the cities is taking place to solve the problems faced by local government officials. It could be said that the usefulness of mutual reference indicates the sophistication of the network.

3.1.3 Enabling factors of local governments' adoption of new practices through a network[9]

Three international intercity environmental network programmes—ICLEI Southeast Asia, CITYNET, and the Kitakyushu Initiative—were selected in order to analyse the processes and factors correlating to the adoption and diffusion of policies through networks. Fujikura et al. (2009), in particular, focused on the process of the adoption and diffusion of policies related to climate protection by ICLEI Southeast Asia, environmental education by CITYNET, and composting of organic waste by the Kitakyushu Initiative. Table 9 illustrates the summary of factors affecting practice adoption through intercity networks in the case of ICLEI Southeast Asia's CCP.

Table 9 Summary of factors affecting practice adoption through network by cases[10]

City	Country	Support of Mayor	Coordinator's role	Autonomy of local government	National government's policy support	International network
Baguio	Philippines	√	√	√		√
Puerto Princesa	Philippines	√		√		√
Naga	Philippines	√	√	√		√
Butuan	Philippines	√		√		
Yogyakarta	Indonesia	√				
Denpasar	Indonesia	√	√			√
Surabaya	Indonesia	√				√
Chiang Mai	Thailand	√	√		√	√
Rayon	Thailand	√	√		√	√

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[9] Based on Fujikura et al. (2009).
[10] Adopted from Nakamura (2010a), and slightly modified to incorporate network-related factors.

| Muangklang | Thailand | √ | √ | | | √ |
| Thung Song | Thailand | √ | √ | | √ | √ |

The results of the study suggest that several factors are important. Internal factors in cities included "support at the mayoral level," "coordination and networking of stakeholders by individuals and organisations within and outside of the local government," and the "sense of ownership of the city government, including the mayor's." Other factors were the "autonomy of local governments from the central government and higher regional authorities," and finance, another aspect of autonomy.

In looking at external factors, the study confirmed that the "existence of policy support from the national government and higher authorities, and financial support systems, in particular," facilitated the implementation of new policies. The study also showed examples that demonstrated the potential of financial and technological support from international development agencies and non-governmental organisations (NGOs) in the implementation of new policies through "active participation in international networks." However, with regard to "expanding knowledge and experiences from outside" when talking about technological knowledge, the intentional spread of technology does not occur when there is a lack of "sufficient communication and discussion with local stakeholders" and "tools and efforts to indigenize outside expert knowledge and experiences." Adequate communication with stakeholders is important as well when carrying out a thorough examination of issues and taking a multi-pronged approach to finding solutions. If cities do not "introduce policies that contribute to solving local issues," policies will not be long lasting without the support of stakeholders. Cities in both developing and developed countries, network secretariats, and international development agencies as external stakeholders should take note of these particular points in the use and application of international networks.

Finally, two factors—"sharing of a sense of purpose with similar cities through participation in networks" and "dissemination of information outside the city through networks"—can contribute to improving motivation and commitment as well as capacity for sustainable development of participating individuals, such as mayors and staff in related departments. The study also demonstrated cases where new policies were further expanded to other cities by network participants.

3.1.4 Incentives and motivations for participation[11]

Cities in developing countries that are participating in the Kitakyushu Initiative

In a questionnaire survey[12] of local governments participating in the recent activities of the Kitakyushu Initiative, the respondents cited the following points as the direct benefits of participating in the network: (1) the construction of physical facilities or implementation of technical cooperation projects, with financial assistance from international organisations; (2) opportunities to build the capacity of staff through their participation in study tours and seminars; and (3) the expenses shouldered by the secretariat, which enabled them to participate in seminars and programmes. The indirect benefits were (4) increasing awareness of the importance of environmental protection within the city, improving the position of environmental protection departments, and stressing the need to establish departments in charge of the environment; (5) opportunities to solicit financial and technical support, and intercity cooperation from overseas; and (6) sharing information within the city office about successful practices in other cities for use in staff training and environmental education. Although there are differences in the perceptions of local governments about direct and indirect benefits of participating in networks, the economic benefits, such as in (1), (3), and (5) are cited first, and effects of capacity building, such as in (2) and (6), are also pointed out. As shown in response (4), the possibility of influencing the negotiating capacity of environmental departments within local governments through their participation in international networks is also expressed.

Japanese cities

Basic motivations for international intercity cooperation for the environment can be seen in the case of Kitakyushu and other cities in Japan, which have accumulated extensive experience in responding to environmental problems such as pollution and waste, and which rely on international environmental cooperation as an opportunity to formally use the existing environmental assets of local governments and businesses. The demand for these assets is declining due to shifts in the economic structures of these cities. The most forward-thinking of these cities are looking for new ways to promote local businesses and industries through international environmental cooperation and linkages

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[11] Based on Nakamura et al. (2010).
[12] The questionnaire was sent to 17 cities; eight responses were received. See Appendix 2 for the questionnaire used for the survey.

with international environmental firms. Regarding the objective of fostering international environmental cooperation, some cities attach particular value to the environmental field while others do not. Table 10 divides the motivations of local governments and firms into economic and normative ones. Economic and normative motivations are reflected in the characteristics of the region and become the driving force behind cities' independent approaches. With the progress of globalization and economic integration in the Asian region, the promotion of international environmental partnerships covering both the economic and normative facets can become a means of managing cities with an environmental focus.

Table 10 Motivations of cities contributing to international environmental networks

Motivations		Local government	Local businesses
Economic motivations	· Use of existing human assets in the region via public funds	· Creation of opportunities to use existing human resources · Creation of employment through industrial development (including research and educational opportunities)	· Creation of opportunities to use existing human resources · Corresponds to changes in industrial structure
	· Promotion of international business	· Support for the creation and acquisition of international environmental business opportunities	· Creation and acquisition of international environmental business opportunities
Normative motivations	· Promotion of environmentally-friendly cities	· Opportunities to strengthen the identity/brand of environmentally-friendly cities	· Approach as Corporate Social Responsibility (CSR) activity
	· Promotion of cities that contribute to the international society	· Opportunities to carry out extensive contributions to international society	· Approach as CSR activity

3.1.5. Network design and the role of the secretariat[13]

To achieve its objectives, an international network for sustainable cities (with a secretariat) must have an appropriate design, and its secretariat must play an effective role. The key factors identified from four international networks in Asia include nurturing

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[13] On the basis of Fujikura et al. (2011)

ownership, developing a replication mechanism, assignment of local coordinators, and engaging local research institutes (see Table 11).

Table 11 Key factors in the roles of the network secretariat and network design, as demonstrated in selected international networks for sustainable cities in Asia

	CITYNET	ICLEI Southeast Asia	Kitakyushu Initiative	UNEP Eco-Town Project
Nurturing ownership	√	√		
Replication mechanism			√	
Local coordinator	√	√		
Local research institutes				√

Nurturing ownership

The network secretariat could play a pivotal role in nurturing the sense of ownership and increasing the commitment of participating cities. It could request the cities to come up with their own development proposals, secure the mayor's agreement and commitment, and perform action planning, in-kind contribution, and appropriate monitoring within the scope of supported projects. The CITYENT and ICLEI Southeast Asia secretariats are good examples. CITYNET has implemented two international cooperation projects on environmental education—Environmental Education (AWAREE) and Post-AWAREE—in collaboration with Yokohama city of Japan, using the grassroots technical cooperation scheme of JICA. The projects have achieved successful outcomes.[14] Post-AWAREE was started in 2007 and completed in March 2010. Colombo in Sri Lanka, Dhaka in Bangladesh, Danang in Vietnam, and Makati in the Philippines were selected as participating cities out of the member cities of CITYNET in August 2007. The secretariat requested each city to develop and submit a proposal that described its current state and issues and the expected coping measures. Through this process, the secretariat tried to elicit the cities' commitment to produce policy outcomes by participating in the project. The commitment of mayors was confirmed at the beginning of the project to

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[14] Meeting with CITYNET Secretariat, 14 December 2010 See Appendix 1 for the details of AWAREE.

secure their sense of ownership. Various capacity-development activities, such as seminars, workshops, and field visits were conducted during the project period. Every year, participating cities were required to develop an action plan, in which objectives were set, and the progress and state of achievement were monitored and evaluated. Colombo, Dhaka, and Makati established or reinforced regulations on waste, wastewater, or underground water management, or education on recycling. All four cities undertook various environmental education activities in selected schools and communities. Danang approved an environmental project that prioritised an environmental awareness programme.[15]

The sense of ownership of the participating cities in Post-AWAREE project is also demonstrated by the city's budgets and implementation of activities, and in some cases, financial donations by multinational companies.[16] JICA's budget was used only for inviting trainees to Japan and the Philippines and to conduct seminars and workshops. The cities needed to secure a budget to initiate any new activities they planned for the training. From project inception, the secretariat intended to let the cities consider the development of new measures (e.g., education programmes) and regulations, since activities implemented during the three-year project period did not guarantee sustainability. The secretariat continues to monitor the progress and state of the cities twice a year even if the project has been completed, although getting prompt responses from them is a challenge.

The experience of ICLEI Southeast Asia also provides lessons for nurturing the sense of ownership of member cities. Since income from membership fees is very low, ICLEI has to rely on donor-funded projects to implement meaningful activities in the network.[17] For ICLEI Southeast Asia, the most important role of the network secretariat is to provide various opportunities that fit the particular context of each participating city. The opportunities include participation in donor-funded projects, fund-raising, referral of project partner organisations, technological know-how, and event information. Also, the secretariat has to reward cities that have demonstrated commitment and achievement to keep them motivated and inspire them to advocate sustainable cities.

ICLEI Southeast Asia also tries to institutionalise the sense of ownership by securing the mayor's agreement upon the development of a proposal for a donor-funded project,

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[15] E-mail communication with Danang city government, 20 January 2011
[16] Ibid.
[17] Meeting with ICLEI Southeast Asia secretariat, 14 October 2010

consent at the initiation of the project (as well as the city council in some cases), and signature of a Memorandum of Understanding (MOU) to secure budget and develop and implement an action plan, in addition to the in-kind contribution of personnel.[18] The secretariat also needs to clearly convey to participating local governments the message that the implementation of new activities will help to solve their problems. Once the information is appropriately communicated, the local governments will judge the necessity and relevance of the project. Recent examples include projects on sanitation and climate change adaptation.

Replication mechanism

The Kitakyushu Initiative's secretariat has demonstrated a unique role in developing a replication mechanism outside of the network.[19] As described in 3.1.2, the network has succeeded in replicating good practices on composting household organic waste in Indonesia, the Philippines, Thailand, and so on. Based on Kitakyushu's experience, replication mechanisms can be classified into several patterns with respect to mediators or promoting agencies. In one pattern, the municipal government collaborated with local NGOs, community-based organisations, and women's organisations. These NGOs and organisations are good at reaching and mobilising members of the community while the municipal government was effective in scaling up the activities in collaboration with these local stakeholders. In other patterns, the replication in other cities was driven by NGO networks, city-to-city/multilateral intercity networks, international development donors, or the central/provincial government in developing countries. Therefore, as demonstrated by the case of Kitakyushu Initiative, the network secretariat could engage and coordinate donors, central/provincial governments, and NGOs based on existing networks of bilateral or multilateral city networks to further replicate good practices.

Local coordinators

ICLEI Southeast Asia also speaks of the effectiveness of a participating city's official assignment and the recognition of the existing local government official as the local coordinator of the international network.[20] In the Philippines, the ICLEI local coordinator is appointed by administrative order in the ICLEI member cities (meaning that the status

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[18] Ibid.

[19] Institute for Global Environmental Strategies (2010), 23–27; Maeda (2009), 1-12

[20] Meeting with ICLEI Southeast Asia secretariat, 14 October 2010; Telephone interviews with local coordinators in the Philippines: Naga city, 18 October; Puerto Princesa city, 19 October, and Baguio city, 20 October

is recognized by the mayor and other departments) and so can conduct ICLEI-related activities as part of his/her work. There is an effort to ensure the effectiveness and sustainability of network activities by adopting the policy of step-by-step decision making, from building a consensus within the local government to the engagement of the mayor, legislators, and stakeholders outside the local government (sometimes including the media). The coordinator plays a key role in this local process.[21] For example, the local coordinator of Naga city in the Philippines (1) gathers information at the national and Asian levels and applies it to Naga city if necessary, (2) monitors the progress of the activity and compares the performance of Naga and other cities, (3) exchanges information with the local coordinators of other cities, (4) coordinates the relevant departments in the Naga city government (e.g., coordination of target planning on the reduction of greenhouse gas [GHG] emissions), and (5) coordinates stakeholders outside of the city government, such as local community organisations (e.g., the Council of Women, example of community organization in the case of Naga city). The roles of active local coordinators do not vary much. In fact, the coordinators of seven or eight participating cities in the Philippines are engaged in capacity development in cities other than their own. In this sense, local coordinators have become an asset of the network, as they are useful for both project implementation within their own cities and the replication of knowledge and experience in other cities. The local coordinators can be considered to be strength of ICLEI Southeast Asia.

Reliance on several cities with committed local coordinators, however, might raise the issue of the free-rider problem in any networks. The payment for local coordinators should ideally be supported by contributions from member cities, but in many cases this does not happen. One or two core cities tend shoulder the bulk of the costs. Other cities simply capitalise on that. A secretariat of network in general needs to address this issue to avoid undermining the motivation of committed cities.

CITYNET has its version of local coordinators, but calls them by a different name: focal points.[22] In the Post-AWAREE project, the secretariat requested participating cities, specifically their mayors, to assign officials as focal points, who could officially conduct network activities and coordinate with other departments within the local government.

Local research institutes

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[21] The mayor's support and his/her continuity are other factors that promote the success and sustainability of network activities. See 3.1.3
[22] Meeting with CITYNET secretariat, 14 December 2010

The UNEP Eco-Town Project demonstrates the importance and potential of engaging local research institutes within the framework of self- or donor-funded projects to sustain and encourage the utilization of the international network for sustainable cities.[23] Eco-Town is an international network activity that UNEP initiated in 2005, in collaboration with Kawasaki city in Japan, to disseminate Japan's experiences with its Eco-Industrial Park to Asian developing countries. The current project participants are state of Penang in Malaysia, and the cities of Bandung in Indonesia, and Shenyang in China. Local research institutes support the baseline needs assessment survey for Eco-Town project and hold stakeholder meetings to discuss each local government's priorities, objectives, and plans. In Shenyang, the local research institute provides more sophisticated scientific assistance. In each case, a local research institute has acted and could act as an interpreter to learn from Japanese cases, which participating local governments cannot accomplish alone. The involvement of local research institutes deepens the level of information exchange and hence learning. Concrete examples are shown below.

Penang. A stakeholder round table was hosted in 2009 by the Socioeconomic and Environmental Research Institute (SERI) which was involved in the Eco-Town project . SERI also developed and proposed to the state government an Eco-Town action plan based on the stakeholder meeting. SERI conducted a needs assessment survey on environmental technology for recycling in the targeted industrial park, with help from UNEP and the Global Environment Centre (GEC), a Japanese supporting agency of UNEP. As of December 2010, a state legislative member in charge of the environment and another member in charge of local government[24] jointly submitted a policy document to officially recognize the Eco-Town project with a budget request for fiscal year 2011. To complement the capacity of the state government, SERI plays an important role in policy formulation, although two ministers' commitment to environmental protection and sustainable development is a prerequisite for this to progress.

Bandung. The Institute of Ecology (IOE) at Padjadjaran University is a local research institute that helps with the Bandung city government's implementation of an Eco-Town

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[23] Meeting with Shenyang city Environmental Protection Bureau and Shenyang Eco Model City Office, 13 January 2010; Penang state legislative members and SERI in Malaysia, 1-2 December; Bandung city development and planning board and IOE, 8 December
[24] In Malaysia, "local government" is the term indicating municipal government that belongs to the state government.

project. Because of rapid urbanisation and the lack of a final garbage disposal site, Bandung aimed to increase the recycling ratio to 20% and initiate a waste-to-energy project by 2013 in its mid-term development plan. Since households generate 70% of the waste at present, the city decided to promote the concept of 3R in the local communities. IOE conducted a baseline needs assessment survey in the Bandung Metropolitan Area to help assess what would be the most appropriate recycling technology for Bandung. IOE co-organised the Eco Creative Fest Fair in October 2010 in cooperation with the city government, UNEP, and GEC to obtain a statement of support from the Mayor. IOE also developed the website for information sharing on Eco-Towns. Ideally, IOE is expected to support the city government in drafting an action plan, conducting a feasibility study on the recycling business, and propose viable institutions to enable recycling.

Shenyang. The Institute of Applied Ecology (IAE), Chinese Academy of Sciences, is instrumental in helping the Shenyang city government adopt new practices through an international network for sustainable cities. This local research institute is planning to conduct a simulation of waste plastic recycling in the city and estimate the city's carbon dioxide (CO_2) emissions in general. The studies will be jointly conducted with the National Institute for Environmental Studies (NIES) of Japan, which has a research agreement with Kawasaki city, Japan—a friendship city of Shenyang (see 3.2.2 for details of previous Shenyang–Kawasaki collaboration). A professor of IAE has been engaged in the city's policy formulation on the circular economy from the beginning and was appointed as an advisor in 2009. Since it is anticipated that local governments in China will have CO_2 emissions reduction targets in the future, the Shenyang city government recognises the value of IAE's technical assistance in policy formulation, implementation, monitoring, and evaluation, especially in the fields where advanced quantitative analysis is needed.

3.2 From the past and on-going bilateral intercity collaboration in Asia: Case study of Kitakyushu – Dalian, Kawasaki – Shenyang, and Yokohama – Penang collaboration

In this subsection, the lessons learnt from city-to-city cooperation are explained. Three cases of bilateral intercity collaboration are examined: (1) Kitakyushu, Japan and Dalian, China; (2) Kawasaki, Japan and Shenyang, China; and (3) Yokohama, Japan and Penang, Malaysia. First, the chronology of the relevant activities and events is shown to understand key stakeholders and actions with regard to intercity collaboration. Then, the

achievements of collaboration, if any, are indicated. Furthermore, the motivations and expected outputs of international collaboration are examined from the perspectives of different actors. Lastly, the appropriate expectations from international intercity collaboration and possible enabling factors are discussed.

3.2.1 Kitakyushu – Dalian collaboration

The city of Dalian in China has carried out international environmental cooperation activities with cities in Europe, the United States, and Korea, as well as the cities of Kitakyushu and Kawasaki in Japan. However, Dalian's relationship with Kitakyushu is the most deeply rooted.[25] The history of environmental cooperation between Dalian and Kitakyushu can be divided into four stages, as shown in Table 12.[26]

Table 12 International environmental cooperation with Dalian by Kitakyushu and Japan

Years	Cooperation activities
Phase 1	(Start of technical cooperation)
1979	Dalian and Kitakyushu become friendship cities
1981	Kitakyushu starts pollution management courses in Dalian
1989	Kitakyushu sends the China-Kitakyushu Production Management Seminar Group to Dalian
1993	Start of visits by local governmental trainees from Dalian to Kitakyushu (until 2002)
Phase 2	(Expansion of technical cooperation)
1993	During the visit of Mr. Song Jian, the State Councillor, Kitakyushu proposed the "Dalian Environmental Model Zone plan" to China.
1994	The mayor of Kitakyushu visited China and held discussions with Mr. Zhu Ronji, former Vice Premier, and Mr. Xie Zhenhua, Minister of SEPA, and received an expression of support for the abovementioned plan. The Chinese government requested the Japanese government to implement a development study on this plan.
1996	A development study on the abovementioned plan was started and a master plan was created (in the areas of air, water, solid waste, and noise;

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[25] Meeting with the Dalian Environmental Protection Bureau, January 28, 2008
[26] Presentation by the Dalian Environmental Protection Bureau at the Fourth Meeting of the Kitakyushu Initiative Network (June 25, 2007) http://www.iges.or.jp/kitakyushu/mtgs/network/kin4/ppt/6.Liang.pdf, and the website of the Kitakyushu Environment Bureau, http://www.city.kitakyushu.jp/pcp_portal/PortalServlet?DISPLAY_ID=DIRECT&NEXT_DISPLAY_ID=U000004&CONTENTS_ID=18342

Years	Cooperation activities
	until 2000). Start of the project on the improvement of combustion of small-sized boilers (until 2000).
Phase 3	(Financial cooperation at the national level)
1997	During a visit by the former Prime Minister, Mr. Ryutaro Hashimoto, Japan proposed the "China-Japan Environmental Protection Cooperation Model City Project" in commemoration of the 25th anniversary of restoring diplomatic ties. Dalian was one of the model cities. Following this, five environmental infrastructure improvement projects were implemented on the basis of the abovementioned plan through yen-loans of 8.5 billion yen.
Phase 4	(Start of international environmental business linkages)
2000	Kitakyushu sponsored a booth and organised a seminar on environmental technologies at the "2000 China International Environmental Protection Expo" held in Dalian.
2001	The Kitakyushu Interdependent Business Consortium for Sustainable Development (KICS) concluded a friendship agreement with the Dalian Environmental Protection Industry Association (DLEPA).
2005	Kitakyushu companies make inroads into Dalian (establishment of offices).

The first phase is the development phase for technical cooperation. Dalian and Kitakyushu became friendship cities in 1979. Based on this relationship, Kitakyushu organised pollution management courses in Dalian in 1981 and production management seminars in 1989. Governmental trainees from Dalian started to visit Kitakyushu from 1993.

The second phase was a period of expansion of technical cooperation. When the representative from the Chinese State Council visited Kitakyushu in 1993, the city proposed the "Dalian Environmental Model Zone plan." Following that, the mayor of Kitakyushu visited China and held discussions with the Vice Premier and the Minister of State Environmental Protection Administration (SEPA, now Ministry of Environmental Protection), after which the Chinese government requested the Japanese government to implement a development study on this plan. The plan was taken up as a JICA project and Kitakyushu extended its cooperation in the development of a master plan in the areas of air, water, and solid waste from 1996.

The third phase was a period of financial cooperation at the national level. In 1997, Dalian became one of the model cities in the "China-Japan Environmental Protection Cooperation Model City Project." Environmental infrastructure projects were implemented on the basis of this plan through yen-loans of 8.5 billion yen.

The fourth phase saw the start of international environmental business linkages in 2000. In the same year, Kitakyushu sponsored a booth at the "2000 China International Environmental Protection Expo," and in the following year, the Kitakyushu Interdependent Business Consortium for Sustainable Development (KICS) concluded a friendship agreement with the Dalian Environmental Protection Industry Association (DLEPA). In 2005, Kitakyushu firms began making inroads into Dalian by establishing offices.

In relation to the Kitakyushu Initiative, representatives from the Dalian Environmental Protection Bureau participated in all four network meetings (organised in 2002, 2003, 2004, and 2007), as well as seminars on air quality management and industrial relocation in 2003.

Through this type of cooperative relationship, the network has brought concrete benefits to Dalian, including economic benefits, a stronger organisational capacity, relationships with other cities in China, and enhanced political leadership within the municipal government.

The benefits for air quality improvement projects conducted through soft loans were high; China got not only soft loans from Japan, but also project implementation was based on the master plan from the development study with the support of JICA and Kitakyushu city. The environmental model city project was backed by loans of 8.5 billion yen. As a result, the Chinese government established a fund for demonstration projects that would introduce Japanese environmental technology to Chinese firms.[27] An additional loan of 3.2 billion yen was provided to improve the water supply and the wastewater treatment facility. On a smaller scale, economic benefits have also been obtained from linkages between private environmental companies and potential customers in both Japan and China through the cooperation of DLEPA and KICS. Companies from China and Japan have participated in expos held every other year in either city: Since 2000, firms from Kitakyushu have joined the "China International

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[27] Meeting with the Vice Director of the Dalian Environmental Protection Bureau, 28 January 2008

Environmental Protection Expo" held in Dalian and organised seminars on environmental technologies; since 2001, firms from Dalian have joined the "Eco-Techno" expo held in Kitakyushu. Around 10 Dalian firms have received orders from Kitakyushu firms. Meanwhile, three or four companies have started projects in Dalian through joint investments between businesses in Dalian and Kitakyushu.[28]

Organisational capacity building and associated technology transfer were viewed as an important result of various technical cooperation activities. The first result was the creation of a master plan using developmental studies on air pollution management and other issues. Without the cooperation of Kitakyushu, this would not have been realised. In addition, some projects brought trainees to Japan to study topics such as energy conservation and pollution reduction. The staff sent from Dalian's Environmental Protection Bureau (EPB) improved their environmental management capabilities, including practical training courses on supervising businesses and conducting inspections. According to Dalian's policy, after officials return to China from training, those who show competency and potential are assigned to posts where they can apply what they learnt. For example, a manager who used to work on environmental cooperation attended the Seminar on Air Quality Management organised in 2003 under the Kitakyushu Initiative. Afterwards, this manager became the section chief of the Dugushan Island Sub-Bureau and is now doing environmental protection administration work, including the prevention of air pollution. Another result was technology transfer. For example, experts from the city of Kitakyushu and businesses who were sent to Dalian conducted audits on cleaner production at factories of cathode ray tubes and other areas. This led to the transfer of cleaner production technologies to companies in Dalian. Transfer of small-scale boiler combustion technology and development of related projects are also cited as an important outcome of the cooperation. Finally, with regard to the usefulness of the Kitakyushu Initiative website content, it was reported that Eco-Town and international cooperation staff within the EPB have downloaded information related to Eco-Towns and presentation materials from meetings, part of which are used as training materials within the department.[29]

The co-operative relationship between Dalian and other cities in China is at the stage which focuses on information dissemination and information sharing. This point is

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[28] Meeting with the Director General of the Dalian Environmental Protection Industry Association, 29 January 2008
[29] Meeting with the Vice Director of the Dalian Environmental Protection Bureau and International Relations Department, 28 January 2008

illustrated through case study compilations on the Kitakyushu Initiative website and presentations at network meetings.[30] Dalian's approach to cleaner production has been presented to various cities in China at numerous meetings. The experience of Dalian has been included in the national government's environmental reports. In 2001, the mayor of Kitakyushu visited Dalian and made a presentation on the outcomes of cooperation activities at the "China-Japan Intercity Environmental Cooperation Seminar." However, cooperation in the form of human resource exchange, such as the dispatch of city staff from Dalian to other cities in China, has not materialised, and support has yet to be provided to other cities in developing countries.

There have been positive changes in interdepartmental relationships within the city government. The vice director of the city's EPB attests that international cooperation with Kitakyushu has strengthened the political power of the departments. A big contributor to the success, though, is the mayor of Dalian, who has given a high priority to environmental problems. In fact, with the cooperation of Kitakyushu, Dalian has also recently created departments for automobile pollution and solid waste management, international cooperation, and an environmental committee secretariat; it has likewise built up the staff in the EPB.[31] Since 2007, the priority placed by the Chinese government on environmental problems has also had a substantial impact on environmental issues: Energy conservation and the reduction of pollution[32] have become major topics throughout China. The national government's evaluation of top personnel in local administrations has started to include a focus on the environment as a criteria, not just economic development as indicators, and this has led to an increased emphasis on environmental protection measures which are being promoted in cities.[33]

The success of the cooperative relationship between Dalian and Kitakyushu can be attributed to many actors. Key roles were played by Mr. Isao Mizuno, President of the Kitakyushu International Techno-Co-operative Association (KITA); Mr. Koichi Sueyoshi, Mayor of Kitakyushu, who visited Dalian; and their Chinese counterparts, Mr. Bo Zilai, the former mayor of Dalian (1992 to 2000), and Mr. Kong Xanfu, the former Director of

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[30] Meeting with the Vice Director of the Dalian Environmental Protection Bureau, 28 January 2008
[31] Office for International Environmental Cooperation, Environment and Economy Department, Environment Bureau, City of Kitakyushu 2003, Environmental Friendship Story
[32] Called "save energy, reduce waste" in Chinese
[33] In 2007, the Chinese government adopted a new performance evaluation mechanism for seior officials of local governments which penalises them if they fail to meet energy efficiency and pollution reduction targets, even if they meet the economic and other targets (Meeting with Mr. Hideaki Koyanagi, Director, Beijing Office, Institute for Global Environmental Strategies, 10 December 2007). In 2007, when SEPA announced the six most polluted cities in the country, the mayors of the six cities were reshuffled (Meeting with Dr. Geng Yong, Assistant Professor, Dalian University of Technology, 8 January 2008)

the EPB. Mr. Xia Deren, Mayor of Dalian (current), and Mr. Wang Zhongyan, the Director of EPB (current), also deserve recognition for continuing the relationship. The involvement of the mayor and directors enabled clear decisions to promote the development of the cooperation framework, including its necessary systems and regulations.[34] Meanwhile, Mr. Zheng Yong, the former manager of the International Relations Department in the Dalian Environmental Protection Bureau, introduced the DLEPB to KICS with the intention of developing a business exchange between the two. The present bureau director and vice director are supporting this type of business exchange.[35] Similarly, the opinion of Kitakyushu was that the political intentions of the mayor and the enthusiasm of the EPB director were important in achieving results through international environmental cooperation.[36]

3.2.2 Kawasaki – Shenyang collaboration

The chronology of the collaboration between the cities of Kawasaki in Japan and Shenyang in China regarding the circular economy is summarized in Table 13.

Table 13 Chronology of the collaboration between Kawasaki, Japan, and Shenyang, China

Timing	Shenyang EPB	Shenyang Development and Reform Commission (DRC)	Other Shenyang city government organisations	Ministry of Environmental Protection (MEP; formerly SEPA)	National DRC	Other national government organisations / state officials
Up to 2006	1997-2000; 2002-2006: Dispatching trainees in environmental technology to Kawasaki annually 2004: Participation in Eco Business Forum in Kawasaki	2005: Office for Circular Economy established	1981: Friendship city agreement with Kawasaki 1997: Agreement on environmental technology cooperation with		2005: Presented draft of circular economy law	

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[34] Meeting with the Vice Director of the Dalian Environmental Protection Bureau and International Relations Section, 28 January 2008

[35] Meeting with the Director General of the Dalian Environmental Protection Industry Association, 29 January 2008

[36] Meeting with the Office for International Environmental Cooperation, Environment and Economy Department, Environment Bureau, City of Kitakyushu, 18 December 2007.

			Kawasaki			
2007	January: Attended Eco Business Forum in Kawasaki September: Dispatching trainees to Kawasaki					
2008	May: Hosted international workshop on circular economy in Shenyang, attended by Kawasaki city officials September: Attended Eco-Town workshop in Kawasaki; Dispatching trainees to Kawasaki					August: Circular Economy Law announced
2009	June: Hosted international workshop on circular economy in Shenyang; Appointed a professor of NIES as advisor September: Received advisor to Kawasaki Mayor, Appointed a professor of IAE as advisor, Dispatching trainees to Kawasaki		February: Collaboration agreement on circular economy with city of Kawasaki May: Vice mayor's visit to Kawasaki June: Received designation of UNEP/IETC Eco-Town project September: Shenyang Mayor met with the advisor to Kawasaki	June: Agreement with Ministry of the Environment, Japan, on Shenyang – Kawasaki collaboration on Environ-mentally Friendly Cities	April: Designated Shenyang as the first Eco Model City	January: Circular Economy Law enacted April: Politburo Standing Committee member visited Kawasaki, instructed Shenyang city to introduce Kawasaki model

			Mayor			
			October: Setting up of Shenyang Eco Model City Office			

Kawasaki's environmental cooperation with Shenyang started in 1997, based on the friendship city relationship between the two cities. Both have been labelled as major industrial cities in their respective countries. Since 1997, Kawasaki has welcomed officials from the Shenyang city government, particularly the Environmental Protection Bureau (EPB), who undergo training on environmental management almost every year.

The intercity relationship started to change in 2008. The Shenyang EPB hosted an international workshop on the circular economy, attended by Kawasaki city officials. The activity was supported by NIES of Japan, which had conducted the study on policies and technologies of a circular economy in Kawasaki and had begun to study Chinese cities by then. In China, the National Development and Reform Commission (NDRC) drafted the Circular Economy Law in 2005; in the same year, Shenyang set up an office to promote the circular economy under the Shenyang Development and Reform Commission (DRC). Shenyang showed interest in promoting the circular economy in the city by hosting an international workshop with the aid of Kawasaki just before the Circular Economy Law was announced in 2008.

In September 2008, the Shenyang EPB participated in the Eco Town workshop held in Kawasaki, Japan, and met with Kawasaki city officials on further collaboration on the circular economy. In February 2009, Kawasaki and Shenyang made a collaborative agreement on the circular economy to deepen their cooperation on environmental technology. Shenyang was designated as the Eco Model City of China after a member of the country's Politburo Standing Committee, who was a former mayor of Shenyang, instructed Shenyang to learn from Kawasaki's experience in environmental management, after having visited Kawasaki. The collaboration between Kawasaki and Shenyang was also reinforced when China's Minister of Environmental Protection and Japan's Minister of the Environment of Japan reached an agreement on the Shenyang—Kawasaki collaboration on Environmentally Friendly Cities in June 2009.

In October 2009, Shenyang set up the Eco Model City project office, which also takes charge of collaborating with Kawasaki. The office functions as the secretariat of the Eco

Model City's project team, which is headed by the mayor and is supported by the vice mayor; the members include the EPB, Shenyang DRC, Finance Bureau, Construction Bureau, Land Planning Bureau, and Economy and Information Commission (former Economy Bureau). The office for the Eco Model City is headed by director of EPB, with one deputy director and six staff handling international cooperation, industry guidance, and laws and regulations. The office is unique in that it is independent from the EPB and could instruct directors of relevant bureaus and departments to formulate policies for Eco Model City.[37] This kind of institutional development is understood as a firm commitment to the cause. In this case, the external condition had resulted in the real commitment of the counterpart city to the problem.

The introduction of the circular economy policy to Shenyang city was led by Shenyang People's government, Shenyang DRC, EPB, Science and Technology Bureau, Economy Commission, and Agriculture Bureau. They concluded that Shenyang needed an alternative development pattern that was different from the traditional one, i.e., the circular economy, to prepare for economic growth. They also want to ensure that adopting the circular economy will result in more policy and financial support from the national government.[38]

Shenyang sees its designation as Eco Model City—the first of its kind in China—as the most significant achievement of its collaboration with Kawasaki.[39] Once a local government is designated as a key policy target, it has better chances of getting financial support from the national government. The establishment of the office for the Eco Model City has enabled the city to coordinate with various departments regarding environmentally friendly economic growth. Collaboration with cities in developed countries is also considered a political achievement, demonstrating policy implementation at an advanced level.[40]

Kawasaki has also started to reap the benefits of intercity collaboration: stronger business-to-business networks between Shenyang and Japanese companies, including progress towards the development of a joint business project in Shenyang, which uses Japanese technology for the circular economy, such as the recycling of plastics and wastewater.

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[37] Meeting with Shenyang office for Eco Model City, 13 January 2010
[38] Meeting with Shenyang EPB, January 13, 2010
[39] Ibid.
[40] Ibid.

3.2.3 Yokohama – Penang collaboration[41]

The relationship between the cities of Penang, Malaysia, and Yokohama, Japan, started when Penang participated in the Regional Congress of Local Authorities for Development and Human Settlements in Asia and the Pacific, held in Yokohama in 1982. The cities found a similarity in their history of international exchange and other characteristics. The municipal secretary of Penang, who led the Malaysian delegation, was inspired by the urban designs of Yokohama. In a courtesy visit to the mayor of Yokohama in 1983, Penang's municipal secretary expressed an interest in cooperation with Yokohama. Penang also sent an official request to Yokohama in 1985.

Yokohama sent a needs assessment team to Penang in 1986 to sign an MOU for cooperation in urban planning and design, road maintenance and management, and solid waste management. The technical cooperation between the two cities evolved in three phases over nine years. The first phase (1986–1989) focused on urban design; the second phase (1990-1992) on road maintenance and management; and the third phase (1993-1995) on solid waste management. Yokohama dispatched one official to Penang every year and paid for the expenses. The official stayed for around three months. Penang city officials participated in on-the-job training in Yokohama through subsidies of the Association of Overseas Technical Scholarship (AOTS), financed by the Japanese government and private companies to promote technical cooperation for industrialization and development in developing countries.

Through cooperation with Yokohama, Penang made several strides in learning. First, it produced a plan that included the first pedestrian shopping mall project in Penang. It was patterned after the streets in Yokohama's shopping areas, which are designed to be comfortable and safe to attract tourists. The features include the pedestrianisation of a street, one-way road access for motor vehicles and parking spaces, the improvement of building codes, traffic safety, traffic calming, and smoothing of traffic flows. The project materialized 10 years after the plan was developed, with partial financial support from the Malaysian national government, after a long series of negotiations with local businesses and shop owners.

Penang's achievement in the solid waste management sector was a recycling

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[41] This section is based on Tjandradewi et al. (2006), 357.

programme which involved the separation of paper, glass, aluminium, and plastic from waste, and was initiated by a four-month pilot project. Subsequent recycling activities included the deployment of trash bins at public spaces and enhancing the awareness of citizens, which was also learnt from Yokohama.

Senior-level officials and decision makers of Penang showed unwavering vision and leadership in establishing international cooperation with Yokohama and mobilising the necessary resources and support from within Malaysia. The technical cooperation and exchange were themselves the intended objective, from which Penang obtained several results. Also, while Penang took the risk of initiating experimental practices, it received free consultancy from Yokohama. Meanwhile, Yokohama applied its vision of contributing to the global society and used this opportunity for capacity development of its city officials as well.

4. Strategies to develop, operate, and utilise international networks for sustainable cities

This concluding section presents strategies for participating cities to develop and best utilise the existing and potential international network for sustainable cities, particularly from the perspective of local governments in Asia, on the basis of discussions in the previous sections. The section also shows how network secretariats as well as supporting international organisations could materialise the potential of an international network for sustainable cities. After each heading below, target readers are mentioned in backets.

Formulation of knowledge networks for sustainable development
[For current and potential participating local governments, network secretariats]

Before referring to the above discussion, proposals for effective knowledge network management for sustainable development that were studied and proposed by the International Institute for Sustainable Development (IISD) are discussed. IISD experimented with formal knowledge networks to support change in specific policies and practices for sustainable development and provided the principles to manage knowledge networks for sustainable development (Creech and Willard 2001).

Creech and Willard (2001) examine the four stages of establishing a formal knowledge

network in terms of strategies for creating an effective management and governance structure for the network (see Table 14). [42] Though an international network for sustainable cities, or intercity network, may not necessarily be the same as knowledge network, the knowledge presented by IISD is relevant and useful to consider the strategies to develop and operate international networks for sustainable cities.

Table 14 Formulation of knowledge network for sustainable development

Stages	Actions
1) Forming relationships	a) allocate time to seek out appropriate partners, b) explore common interests that hold the network together, c) learn realistic expectations of partner performance, d) develop and apply criteria of membership, and e) extend relationships beyond core membership, particularly donors
2) Organising relationships	a) develop goals, objectives, and work plans of network, b) decide how the network will be managed, and c) explore options for financial resources particularly to support network coordination functions
3) Formalising relationships	a) for members to discuss governance of network, b) begin with finalising agreement on goals, objectives, and principles, c) codify the membership arrangement, d) set decision-making rule regarding what requires consensus, majority vote, or merely input to secretariat, and e) customise the network structure
4) Institutionalising relationships	a) be open to change processes and b) review all relationships regularly to focus on solid, high-performing relationships

Source: Collated from Creech and Willard 2001 (58, 68, 79–81, 89–90, 92)

Local government's steps to utilise an international network for sustainable cities
[For current and potential participating local governments]

The idea of having several steps—from scoping to the formalization of the network—would be applicable to any international intercity network programme. Depending on the objective of the network, the third and fourth stage (i.e., the formalisation and institutionalisation of the relationship) may not be reached, so that the network could remain a loose linkage with a transparent rule on collective decision-making. Local governments seeking the opportunities provided by the international

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[42] It should be noted that networks could develop horizontally by means of expanding membership, interaction with other institutes, and so forth.

network may first start searching for potential partners from various existing networks. After participation in and the utilization of network programmes, the development of joint activities with specific partners might be achieved. Networking among local governments using the international network would comprise activities from the provision and exchange of information, to nurturing the relationship and trust, and to joint actions with specific partners. The activities could differ by the level of engagement of participating members and partners.

The steps for the potential participating cities to initiate the utilisation of an existing and potentially new international network can be summarized as follows:
1) Search existing networks
2) Join planned/existing international networks
3) Assess the effectiveness of the networks with several trials
4) Propose and create new programme under the network
5) Propose and lead the discussion and preparation of a new network

For potential city considering participation in intercity networks, formulating an international network for sustainable cities is a choice between creating a new one or using an existing network to initiate new programmes and activities. Developing a new network entails a huge cost, especially for local governments, and is feasible only if national governments or international organisations commit to provide the necessary funds. Otherwise, initiating new programmes and activities under an existing framework and expanding the membership of the new programmes would be easier and more practical for all stakeholders.

Benefits, opportunities, and challenges of an international network for sustainable cities
[For potential and current participating local governments, network secretariats]

What kinds of benefits could a potential user of the international network expect? As the study of motivation for the cities in developing countries and Japan shows in section 3.1.4, both tangible and intangible benefits can be expected. The tangible benefits for cities in developing countries incorporate economic gains, such as project financing and organisational and individual capacity development for local governments. For Japanese cities, the tangible benefits are the promotion of local environmental businesses, as demonstrated in the cases of Kitakyushu and Kawasaki (See Table 9). Intangible benefits for local governments in developing countries include access to

information and funding opportunities, in addition to obtaining an international authority to draw more attention to an environmental issue within the local government. The intangible benefits for a city in a developed country is its promotion under international competition and political demonstration as a city of human capital for environmental management or one that contributes to the global society (Table 9). Such an idealistic benefit might be considered an achievement in a city where there is political support among constituency. Apart from local firms, research institutions could also benefit from collaboration with an international network. An example is the Shenyang – Kawasaki cooperation, where research institutions in China and Japan have developed a collaborative relationship with local governments in both countries to extend the research and contribute to policy formulation and assessment in China.

It is crucial for the network to present benefits of participation to mayors, local government officials, businesses, and researchers according to their priorities and interests, as the significance of potential benefits differs from stakeholder to stakeholder. It is also important to identify more clearly key stakeholders of a networking as schematically shown in Figure 1. Mayors of cities in developing countries might be interested in foreign direct investment in the environmental business in their cities, while local government officials would be attracted by opportunities of capacity development for themselves. The alignment of interests and expectations of participating actors is crucial to an effective and operational network. A variety of programmes and designs could be considered.
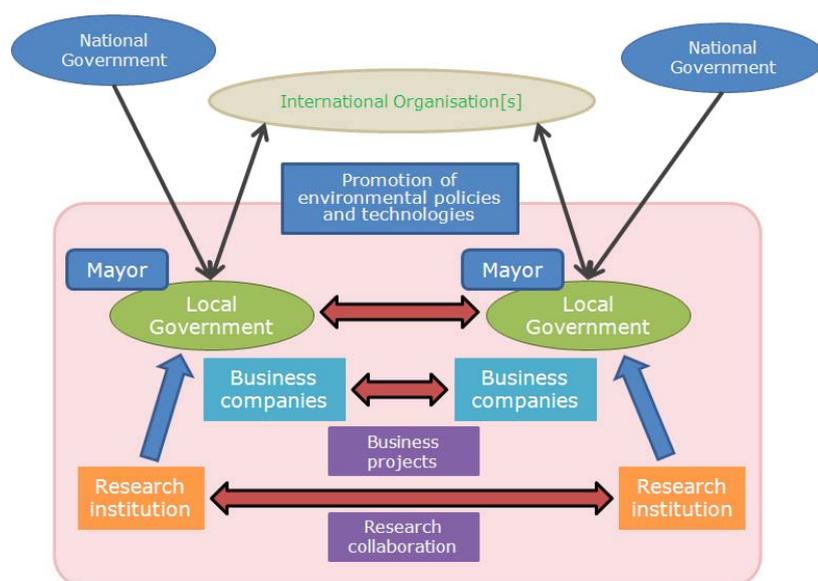

Figure 1 Potential stakeholders of regional intercity networking

What, then, are the means of realizing and maximising the opportunities from an international network for sustainable cities? Mutual benefits would be the key, as shown by the Kitakyushu – Dalian and Kawasaki – Shenyang intercity collaborations. In both the cases, the city-to-city cooperation has aimed not only for public-to-public technical (or financial) assistance, but also business development that eventually seeks profitability. Kawasaki considers international contribution through environmental technology as one of its growth strategies.[43] The strategic engagement of the business sector is a factor that will promote the utilisation of the international network.

Another approach would be to link committed and motivated cities that are eager to learn and share knowledge and experiences. The study on mutual reference and practice diffusion among three Asian intercity network programmes on the environment suggests that the more the participating cities are eager to learn, the more frequently they participate in the network activities of capacity development.[44] Indeed, some of the cities which actively participated in the network activities actually adopted new practices, such as organic waste composting and environmental education. Forming a coalition of committed cities would enhance the potential of the network.

Mutual learning is one of the main objectives of international intercity network programmes, which aim to go beyond information sharing. What are the enabling factors for mutual learning that lead to the actual adoption of new practices in a city? Studies show that there are enabling factors that facilitate the adoption of new practices through intercity network programmes (Fujikura et al. 2009). General factors include the importance of "support at the mayoral level," "coordination and networking of stakeholders by individuals and organisations within and outside of the local government," the "sense of ownership of the city government, including the mayor," the "administrative and financial autonomy of local governments from the central government and higher regional authorities," and in particular, the "existence of policy support from the national government and higher authorities, and financial support systems." There are also factors that are specific to network-associated activities: "active participation in international networks," "adequate communication with stakeholders," and the "introduction of policies that contribute to solving local issues."

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[43] E-mail communication with Kawasaki city Environmental Bureau, January 5, 2011
[44] Nakamura, Mori and Elder (2010)

The benefits of using experts and international actors through international network are evident in the Dalian – Kitakyushu, Shenyang – Kawasaki, and Penang – Yokohama city-to-city collaboration discussed earlier in this report, as well as the UNEP Eco-Town Project. In the Dalian – Kitakyushu and Penang – Yokohama cases, local government officials provided the opportunities of peer-to-peer learning for the counterpart local governments. In the Shenyang – Kawasaki collaboration, both local and international experts have contributed to a Chinese city's policy development and implementation of a circular economy. Under the UNEP Eco-Town Project, international experts have supported and will continue to support the policy framework development and implementation on Eco-Town by providing advice and useful knowledge on models.

However, some difficulties were also observed in the cases and studies above. In some cases there was a shortage of funds and not very many members were committed to contribute to capacity development and practice diffusion (Nakamura et al. 2010; Seymoar et al. 2009). In the 6th Asia-Pacific Eco-Business Forum held in Kawasaki, Japan, in February 2010, the need for funding of cities in developing countries was cited. The relatively few cities that frequently participate in network activities or demonstrate a strong commitment or motivation may not have enough funds to invite cities from developing countries. The problem of a lack of financial resources is not easily solved, unless the network succeeds in raising funds from national governments, international organisations, private foundations, or others. However, too much focus on the financial sustainability of the network could make it difficult to achieve its main its objectives including the mission-oriented fixed-term activities. The network secretariat ought to develop attractive and meaningful activities under budget constraints to encourage the participation of more motivated cities, apart from identifying and linking the cities that already show strong interest.

Governance of the network
[For network secretariats, supporting national governments and international organisations, potential and current participating local governments]

The governance, management, and operation of the network are additional issues to be considered to achieve network objectives. To respond to the needs and interests of participating cities, the network has to have effective communication and decision-making mechanisms that are trusted by the members. When members are unable to convey their concerns and interests or if these matters are not properly

translated into programmes and activities, participating cities will lose their motivation and sense of ownership. It might be useful for a network secretariat to include a kind of award system in programmes and activities so that cities awarded tend to feel more committed to sustainability agenda. The network secretariat's capacity for internal communication and fund-raising is critical. The secretariat is expected to interact with external actors, including international development agencies, banks, and private companies, particularly for financial and institutional support and collaboration.

When the network is well organized, the way members and organisations deal with its activities and action plans affects the commitment of the participating cities and the effectiveness of the activities. According to the secretariats and participants of several international networks, it is advisable to regularly rotate the host city to create a sense of ownership among the members and get their active participation.[45] ICLEI, at the global level, changes its host city every three years and C40 Cities (Climate Leadership Group),[46] every two. CITYNET's secretariat is in Yokohama, which has been its host city for 20 years, but in 2013, the secretariat will move to Seoul, South Korea, and a new host city will be elected in the next general council meeting. In contrast, the Kitakyushu Initiative and Asian Network of Major Cities 21 (ANMC21)[47] do not rotate their host cities. It is important for an international network, especially one whose operation cost comes largely from membership fees, to ensure the transparency of decision-making, execution, and evaluation. For the transparent mechanism to function smoothly, the role of representative city or cities must be clearly defined and the city or cities must be regularly changed. When a network rotates its host city, it has to execute an appropriate transition and secure the necessary resources for the new host city.

Potential activities on a network other than demonstrated ones in Asia
[For potential and current participating local governments, network secretariats]

The possible activities to be adopted in an international network for sustainable cities in Asia are broader than those demonstrated by the existing networks in Asia. As described in section 2, activities include knowledge and capacity development, fund-raising and advocacy, business promotion, and joint implementation with regard to

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[45] Ishinabe (2010), 14–15
[46] C40 is an international intercity network of 40 major cities, including London, New York, Tokyo, Hong Kong, Bangkok, and Jakarta, which tackles climate change
[47] ANMC21, an regional intercity network of Asian mega cities that aims to promote Asian region in international society and solve urban issues collaboratively, is hosted by the metropolitan government of Tokyo, Japan.

policies, procurement, research, and carbon financing. Apart from the existing cases in Asia examined in section 3, there are several interesting activities being conducted in European and global networks. ICLEI Europe has undertaken a joint campaign called PROCURA+, which promotes local governments' green procurement.[48] The green procurement programme includes buses, cleaning products and services, electricity, food and catering services, information technology products, and building construction. A planning and implementation guide called "Five Milestones" is provided, and manuals are available for participating local governments. The benefits for participating cities include opportunities to attend seminars, conferences, and study tours, and training and consultancy services at discounted rates.

Another example of international network activities at the global level is a purchasing consortium for clean technology products, which is organized by C40 Cities.[49] C40 Cities is supported by the Clinton Climate Initiative (CCI) of the William J. Clinton Foundation, which aims to combat climate change. CCI pools the buying power of participating cities to lower the price of energy-saving products and introduces companies to the cities, giving more than 1,000 cities access to affordable energy-efficient products thus far.[50] These examples present possible future activities in an Asian network for sustainable cities.

Regarding climate change mitigation and low-carbon development, possible network activities include the identification and formulation of a co-benefit type of low-carbon development programmes and capacity development for measuring the reduction of GHG emissions in developing countries (Nakamura, 2010a). The measurement and estimation of the reduction in GHG emissions can be conducted as part of the capacity building for the Clean Development Mechanism (CDM) being implemented by JICA and IGES; both organisations are supported by Japanese national government. Therefore, the point is that it is possible to use existing capacity-building schemes to support an intercity network for low-carbon development, focusing on low-carbon development programmes that are executed or coordinated by local governments in Asian developing countries. Capacity development on measurement could enable international cooperation, in particular, a bi-lateral one, under the context of the international discussion on measurable, reportable, and verifiable (MRV) mechanisms to promote cooperation.

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[48] http://www.procuraplus.org/
[49] http://www.c40cities.org/
[50] http://www.clintonfoundation.org/facts/content/william-j-clinton-foundation-overview

Desirable roles of national governments, international organisations, and existing networks

[For national governments, international organisations, network secretariats]

Lastly, here are some suggestions and requests to stakeholders of international networks for sustainable cities. It is recommended that national governments make collaborative agreements between themselves to support intercity cooperation and institutionally underpin intercity collaborative programmes. It is also suggested that international organisations link funding opportunities with local governments utilizing international networks composed of city networks. Meanwhile, the secretariats of existing intercity networks are urged to allow the network to initiate new activities on specific issues under the auspices of external funders, review their performance, and focus on performing activities to improve and strengthen the programme, and explore collaboration among networks on specific topics by playing complementary roles among several networks.

Appendix 1: City-to-city cooperation for environmental education - Initiatives implemented by CITYNET [51]

Abstract

This article focuses on a case study of the concept of city-to-city (C2C) cooperation for environmental education undertaken by CITYNET (the Regional Network of Local Authorities for the Management of Human Settlements) in Phnom Penh and Hanoi under the initiative, AWAREE (Awareness on Environmental Education) in Asian Cities from 2004 to 2007. It highlights how CITYNET created a sustainable network of cooperation amongst cities and local actors mostly in Asia in order to demonstrate the principle of C2C cooperation in its operations.

The project was supported by JICA Yokohama and initiated by the City of Yokohama. The C2C cooperation initiative among three cities (Hanoi, Phnom Penh and Yokohama) adopted a range of methodologies to enhance exchanges and capacity development, particularly in the beneficiary cities. Methodologies included needs assessment surveys, pilot missions (which both verified the needs and possible support from the resource city - Yokohama), dispatch of experts, and trainings in the resource city in the form of North-South Cooperation, and South-South Cooperation (between Hanoi and Phnom Penh) which resulted during the project's implementation.

From the findings, C2C cooperation was effectively used by the recipient cities as a means to enhance their strategies and programmes, as reflected by the development of AWAREE action plans prepared by each beneficiary city, the integration of the plan in the ongoing activities, budget allocation by beneficiary cities for the activities, and closer partnership development particularly in Phnom Penh between the Department of Education, Youth and Sport and Department of Environment and the Municipality.

Key elements/ingredients of C2C cooperation were reviewed based on the author's perspectives and the lessons learnt from the project. Although the elements/ingredients were not measured quantitatively at this study, the review of these elements may help practitioners to plan and carry out C2C cooperation in other fields as well. This article

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[51] This section was contributed by Dr Bernadia Irawati Tjandradewi, Program Director of CITYNET and slightly edited by the lead author. Current address of the contributor: CITYNET, 5F, International Organisations Center, Pacifico-Yokohama, 1-1-1 Minato Mirai, Nishi-ku, Yokohama 220-0012, Japan. Tel: +81-45-223-2161; Fax: +81-45-223-2162; E-mail: bernadia@citynet-ap.org; bernadia_25@yahoo.com

however does not cover the extension of AWAREE under the framework of the Post AWAREE.

1 Introduction

Environmental deterioration has been indicated as a major concern for most cities in Asia, partly blamed on the cities' extensive and sometimes exclusive focus on economic growth, rapid development and industrialization. UNHABITAT and UNESCAP (2010) noted that in most Asian cities today, ecological footprint is in excess of five hectares per head, well above the sustainable footprint of around 1.5 to 1.9 hectares. In general, environmental concerns in Asian cities are predominated by high air pollution, low quality and quantity of drinking water, lack of wastewater treatment, increased amount of solid waste generated, as well as lost of biodiversity. Although the challenge of climate change varies, many Asian cities particularly those located near coastal zones have a high risk and vulnerable to climate change.

An increasing understanding and growing awareness of the above issues, particularly the need to involve all urban residents and stakeholders in finding solutions, has led to greater emphasis being placed on environmental education initiatives as a starting point for both minimizing the impacts of environmental change and also preventing them in the future. In Asian cities, while environmental education has been embedded in all forms and levels of education the efforts has not quite led to expected society-wide change in environmental behaviour (UNHABITAT & UNESCAP, 2010). It was also noted that environmental education should be recognized as a policy priority for more effective and broader sustainability. It should also have greater gender equity and if it is to be successful, as Barazza et al. (2003) stated in UNHABITAT & UNESCAP (2010): "environmental education needs to vary from region to region and be realized in different ways." Given the variety of perspectives, social-economical differences, environmental education should be participatory, practical and capable of dealing with complexity.

The above issues and priorities need to be seen in light of an increasingly urban world. It is projected that by 2030, more than 50 percent of the global population will live in

urban areas, mostly in developing countries. Therefore it is expected that broad cooperation at city level will continue to grow as an important tools for sustainable urban development (Tjandradewi, Marcotullio, & Kidokoro, 2006). Most C2C cooperation activities have been carried out in the field of environment. This is understandable as cities in general have faced many common environmental problems and challenges, particularly cities of similar population sizes, or in similar stages of economic growth. Moreover, cooperation in the field of environment provides better opportunities for deeper and direct involvement of the local communities, and provides considerable externalities to improve the quality of life in cities.

The basis and justifications for cities to be involved in C2C cooperation can be seen in the very nature of CITYNET as an organisation. According to a survey carried out by CITYNET, cities/local governments have highlighted a number of reasons why they joined CITYNET. These include: 1) to have multilateral contact and to cooperate with other cities across borders; 2) to go beyond just sister or friendship city cooperation; 3) to get publicity or exposure internationally; 4) to be part of the global movement or an organisation/network that extends itself globally; 5) to receive useful information related to urban areas; 6) to obtain technical support from others (either member or partner of CITYNET) and 7) to get access to any resource available from international organisations.

This article explores the case study of CITYNET as a platform of cooperation amongst cities/local governments and other local actors as well. The case study focuses on the application of C2C cooperation in CITYNET's mid-term project on environmental education called AWAREE (Awareness on Environmental Education) in Asian Cities carried out between 2004 and 2007. Figure A1 shows the relationships between different stakeholders and cities participating in the AWAREE project. The project was initiated by the City of Yokohama and facilitated by the Secretariat of CITYNET. It was funded by JICA Yokohama, and implemented in Hanoi (Vietnam) and Phnom Penh (Cambodia). Other organisations at the local level (for example, schools and educational institutions, NGOs and other groups) as well as institutions at the national level (including ministries and other governmental entities) were involved in both the participating cities. This article however does not include the next phase of AWAREE which was carried out between 2007-2010 under the Post-AWAREE (Combating Global Warming through the Achievement of Environmental Oriented Urban Society) project carried out in Colombo (Sri Lanka), Danang (Vietnam), Dhaka (Bangladesh) and Makati

(the Philippines). Like AWAREE, the Post-AWAREE phase was also supported by JICA Yokohama and the City of Yokohama.
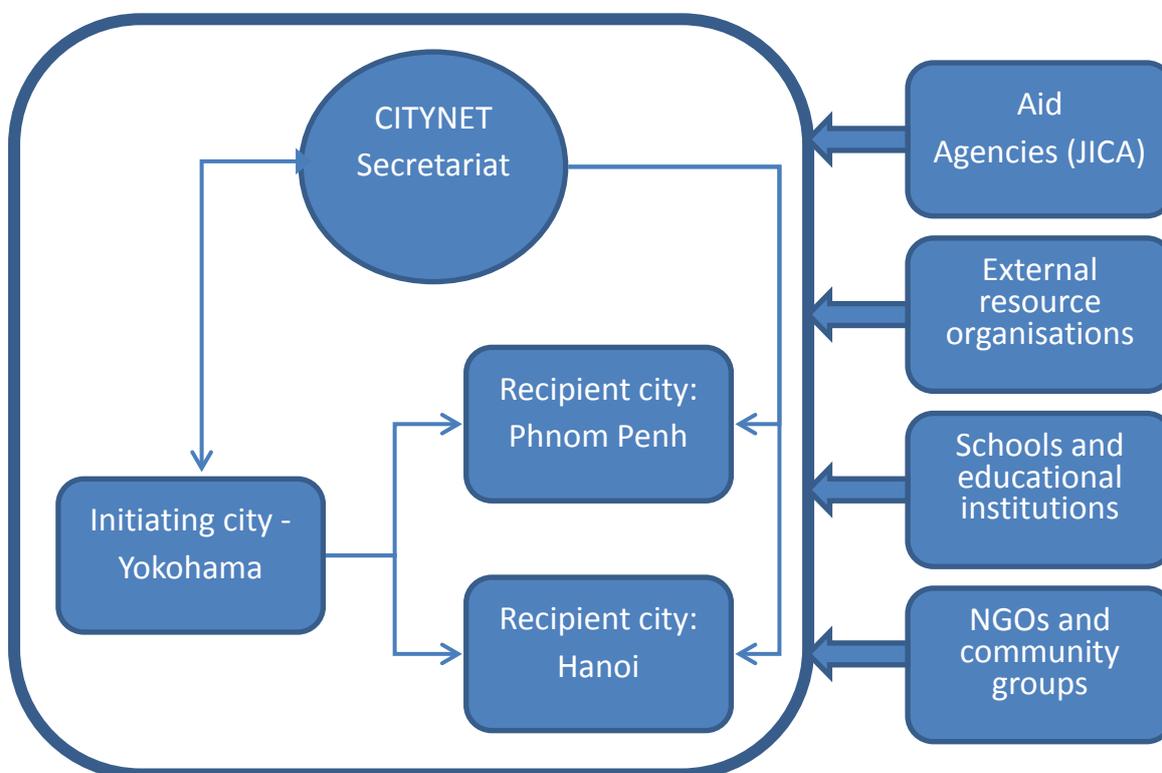
Figure A1 Chart showing different stakeholders and participating cities in AWAREE

CITYNET has been promoting broad C2C cooperation in its activities on a number of themes and issues[52]. There is no universally accepted definition of C2C cooperation. In this paper, C2C cooperation is defined as all possible forms of relationships between local governments at any level in two or more countries that are collaborating together for mutual interest and benefits, with or without external support. C2C cooperation in CITYNET has multilateral contexts, as it is implemented beyond bi-lateral C2C cooperation.

This article demonstrates that C2C cooperation can support the sustainability of a project if proper consideration for matching demand/needs and supply/offers are undertaken, and key elements/ingredients of C2C cooperation are applied. Tjandradewi et al. (2006, 2009) identified a number of elements/ingredients that contribute to the

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[52] For further information on programmes and projects of CITYNET, please refer to its website at
-http://www.citynet-ap.org/

success of C2C cooperation. These include (1) commitment to link the participating cities together, (2) broader local community-wide participation, (3) understanding of the aims and objectives of the initiative, (4) clear efforts to ensure reciprocity, (5) producing result through real examples, (6) political support from higher levels of government, (7) consistent and strong local leadership, (8) cost sharing and cost effectiveness among the participating cities, and (9) free/transparent   flows of information (Tjandradewi et al., 2006, 2009).

This article is divided into the following sections, the first section discusses the process of identification and development of the project AWAREE, the second section looks at the modalities of C2C cooperation used by AWAREE, and the third section reviews key elements/ingredients that were applied in the initiative.

2 The Process of identification of the cities needs

Assessment of challenges and current status

C2C cooperation does not happen automatically without any aims or objectives. The process of identification of the theme for C2C cooperation is in itself a critical part and starting point for a successful initiative. In the case of AWAREE, this process started with the visit of two Yokohama City Officials to the CITYNET Secretariat in early 2004 in order to discuss areas for collaboration with CITYNET's member cities. Using funding from bilateral agencies such as JICA, one of the key themes selected for collaboration was environmental education.[53] This theme was in line with the priorities identified by CITYNET's member cities, and therefore, environmental education was chosen as a theme for collaboration between Yokohama and other member cities.

As CITYNET is a 'member-driven' organisation, in general, the Secretariat facilitates matching between offers, needs and demands of its member cities. A needs assessment through questionnaire survey was carried out to identify member cities that were interested in the theme, and their current status with regards to environmental education initiatives. The questionnaire contents were based on four points – formal education, non-formal education, manpower capacity building, and networking, collaboration and communication. In addition, project assessment was also undertaken

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[53] Others were related to birds conservation and the greenery. The City of Yokohama had later on applied JICA grassroots partnership funding for Bali Myna's conservation project for Indonesia. The project is on-going.

via a questionnaire survey to assess the responding city's environmental challenges, their approaches to environmental education and institutional constraints. The overall framework of AWAREE is shown in Figure A2 below.
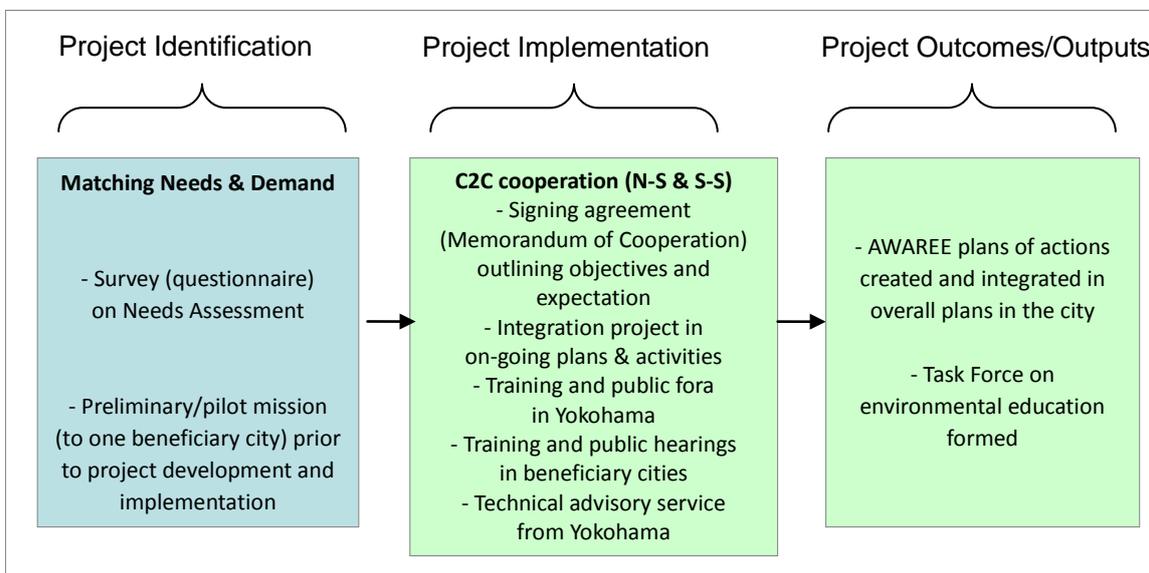
Figure A2 The Framework of the Environmental Education Project or AWAREE

In line with the countries targeted for support by JICA, the survey was carried out among member cities of CITYNET in Cambodia, China, Indonesia and Vietnam. Eight of 14 cities responded: Phnom Penh (Cambodia), Hue, Hanoi, and Ho Chi Minh (Vietnam), Nanjing and Wuhan (China), Balikpapan and Bandung (Indonesia). This response rate of 57.1 per cent clearly highlighted the high interest of the countries/cities towards urban environmental improvement with focus on education, as well as their intention to cooperate with other cities, especially Yokohama, under the framework of C2C cooperation.

When asked about the common environmental challenges that they face, the eight cities that responded identified their particular concerns closely related to their daily lives, including solid waste management, water pollution (due to lack of wastewater treatment for both industrial and households), and air pollution (Figure A3). Solid waste ranked the highest (35 percent), followed by water pollution (29 percent), air pollution (24 percent) and noise pollution (12 percent). It is interesting to note that none of the respondents identified common global environmental priorities usually mentioned, such as climate change, low carbon society, unsustainable consumption, and so on in their

questionnaire responses.
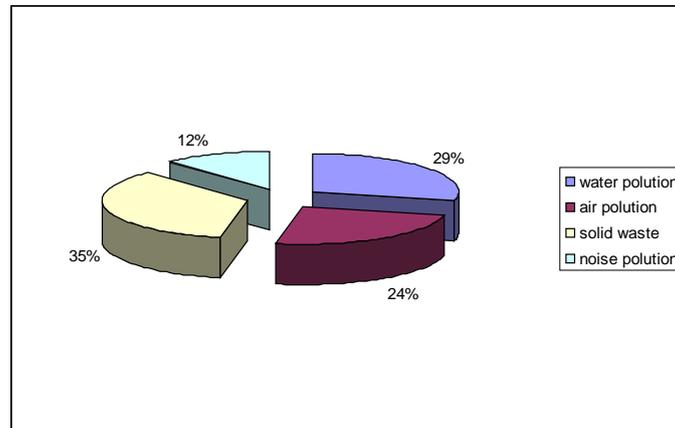
Figure A3 Type of environmental concerns in Asian cities

Source: CITYNET (2007)

Analysis of the responses from the eight cities show that they have carried out activities and initiatives on environmental education, including public awareness campaigns on environmental hygiene for communities, environmental education curricula for schools, establishment of 'green' schools and amenities, and enhancement of community awareness on environmental issues. The cities that did not have any focal points in their local government to promote environmental education had had plans to create such focal points. Concerning the curricula, local governments had less autonomy to influence and implement the curriculum. But, environmental issues are a very popular topic among the eight cities, particularly for additional and extra-curricular activities in the school curriculum.

On average, children in the eight cities were exposed to environmental education at schools from the age of 10.4 years (ranging from three to eighteen years old). School activities that were implemented included examples such as waste collection, tree plantation, and presentation on environmental studies. Only two of the cities that responded conducted trainings for teachers on environmental education, while others did not have or had plans to provide such trainings for school teachers.

The survey clearly showed that the cities were concerned by the limited information on environmental issues that was disseminated in order to raise awareness amongst

citizens and teachers. With regards to tools used to promote public awareness on environmental issues, they were mostly lectures on the environment for citizens at community-based facilities, as well as observation tours. However, they admitted that more programme for teachers were needed. Environmental education at home was still considered a low priority. TV programmes were still not being considered, despite the intention of local governments to raise public awareness on environment through TV/radio programme.

The questionnaire survey also included questions related to expectations of the responding cities from the 'resource city' of Yokohama. The cities' expectation varied considerably, with most wanting to have more information on environmental education and training programmes for teachers, teaching methodologies, textbooks and materials for education.

Based on the combined results of the call for participation, needs assessment survey, and a geographical balance applied by CITYNET, three cities were selected from those that responded: Phnom Penh, Hanoi and Nanjing. The cities had clearly expressed their commitment to run the project and their readiness to cooperate with other cities, and different local actors/institutions.

Although Nanjing was one of the three cities that were selected, this paper only describes the case of Phnom Penh and Hanoi as Nanjing decided to withdraw from the project a year later due to internal   reasons. Please refer to Table 1 of comparison of the basic data of Yokohama, Hanoi and Phnom Penh.

Table A1 Comparison of Basic City Data of Yokohama, Hanoi and Phnom Penh

General indicators	Yokohama (Jan 1, 2009)	Hanoi	Phnom Penh
Population (person)	3,654,427 (male: 1,835,383; female: 1,819,044)	approx. 6,448 million (2009)	1,327,615 (2008)
Persons per household	2.34	-	-
Population density (persons/km^2)	8,401	-	3,516
Number of households	1,559,178	-	184,566

Area (km^2)	434.98	3,324	377.6
Annual income per capita (US$)	32,800	1,136	300
Major industry	Wholesale and Retail Trade, Service, Manufacturing (Machinery, Food, Transportation, Information and Communication, Electronics), Medical, Health care	Electronics and IT, Machinery, Equipment, Textiles & Chemicals	Clothes
Major languages	Japanese	Vietnamese	Khmer
Climate	Average Temperature 15.6 °C, Annual Rainfall 2,132.5 mm	Temperature 24.3 °C, Rainfall 1,585 mm	
Website for more information	www.city.yokohama.jp	http://www.english.hanoi.gov.vn/	http://www.phnompenh.gov.kh/
Member of CITYNET since	1989	1989	2002

Sources: Statistical Pocketbook of Yokohama 2010

(http://www.city.yokohama.lg.jp/ex/stat/handy/2010/2010-a3.xls);

http://www.english.hanoi.gov.vn/; http://www.phnompenh.gov.kh/

Assurance of matching needs and demands

In order to ensure that there was a clear understanding and matching of the needs and demands of the responding cities that were selected, a preliminary mission by Yokohama City Officials (manager level) and representatives from CITYNET Secretariat was carried out prior to the project implementation. Due to budget constraints, only one city was visited. The mission aimed to verify survey's findings and to further discuss with beneficiary cities on programme identification and proposed actions. They were able to meet with the Mayor of Hanoi who affirmed his city's commitment to carry out the project as part of C2C Cooperation. The mission also confirmed the need for environmental improvement with emphasis on education. The discussion also resulted in a need to focus on both formal and informal education at primary and secondary school levels.

In addition, the preliminary mission was used to explore the key areas of possible assistance that Yokohama as the resource city could provide. As one Yokohama official mentioned, the project was timely as Yokohama had also just embarked in implementing "Yokohama City Environmental Education Basic Policy."

A courtesy visit to the JICA country office in Vietnam also helped understand other local activities currently being carried out by them, or was being implemented in the country. This was useful information to relate the proposed project with other on-going and/or planned activities, such as the proposal on Hanoi's waste separation (for execution in 2005 at that time) which was to be endorsed by the Government of Vietnam.

Integration of the project in on-going plans

From the beginning, there was a clear understanding that the proposed project was to be integrated to on-going plans and programmes of the selected cities. Focus was given to formal and informal education at primary and secondary schools. As a pre condition to participate in the project, the beneficiary cities prepared AWAREE action plans, which not only outlined the activities, but were also used as an approach to integrate the project into broader/overall development plans and activities of the beneficiary cities. Both cities had different approach in preparing the action plans. Hanoi relied on its Department of Education and Training (DOET), while Phnom Penh brought together the Department of Education, Youth and Sports (DEYS), Department of Environment (DOE) and Municipal Office with the leading participation of two Vice Governors[54]. The action plan of Phnom Penh was also linked to the poverty reduction activities and city development strategies as their effort to mobilize joint resources and ensuring the longer-term sustainability of AWAREE.

Project support system

Another critical aspect of C2C cooperation is the identification and implementation of project support systems. In this project, project support was mostly given in the form of technical aspects which focused on 'soft' issues, for example teaching materials introduced by the City of Yokohama had to use local products or whatever goods

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[54] Vice Governors at that time: Mr. Mann Chhoeurn (focal point assigned by the Governor for CITYNET) and Mr. Map Sarin (responsible for education)

available in the beneficiary cities.

Funding from JICA Yokohama was used for travel and exchange of personnel, including travel of Yokohama City's officials from the Departments of Education and Environment and representatives from CITYNET Secretariat to the beneficiary cities under the advisory services; travel for officials from beneficiary cities to Yokohama for training and study visit (as part of north-south exchange); and travels by and amongst beneficiary cities (as part of south-south exchange). Funds were also allocated to print leaflets and education materials. In addition, lecturers from Japanese universities were also involved in the advisory service to support the team from Yokohama City.

Percentage time and effort of each activity of the project was as follows: 46 percent for advisory services which also included training and workshops in the beneficiary cities; 27 percent (north-south exchanges; 18 percent for study visit and training (south-south exchange); and 9 percent for pilot mission (funded by CITYNET). As most funding was spent for exchanges, beneficiary cities were expected to allocate their budget for their local actions' implementation. Through this approach, beneficiary cities had had to integrate their proposed action plans (identified as part of this project's requirement) into their own plan and or on-going activities' budgets.

The project supports the uniqueness of each beneficiary city. As environmental education is related to social-culture aspects of the resident's lives and surroundings, the project supported the beneficiary cities in identifying their needs and local actions in participatory ways. Each city had a different approach in integrating environmental education in school curricula. Hanoi, for example, identified environmental education issues in key subjects such as citizen education, biology and geography of secondary schools. At that time, the Ministry of Education and Training of Vietnam (MOET) had been developing guidelines for environmental education implementation. During the AWAREE gathering, the Guidelines were introduced to teachers and headmasters, many of whom had heard about the Guidelines for the first time.

The two cities also had differences in appointing focal points for the AWAREE project. Hanoi nominated the Department of Training and Education (DOET), while Phnom Penh chose the Department of Environment (DOE) as their focal point. In addition, Phnom Penh Municipality had also mobilized the participation of the Department of Education, Youth and Sport (DOEYS). Prior to project, DOE and DOEYS had not carried

out any joint activities.

Creation of action plans

As required in the project's document, each beneficiary city, with support from the Yokohama team (comprising of the officials from Yokohama City and CITYNET Secretariat), developed their own AWAREE action plans. Local seminars, workshops, and training sessions organized during the visit of Yokohama's team also helped in the identification of factors that needed to be improved. The local gatherings in the form of seminars and workshops aimed to diffuse the experience of Yokohama, saw the participation of a wide range of stakeholders, including local governments, teachers, head masters, and in Hanoi by national government entities (the Ministry of Education and Training), media and local leaders as well.

Although both cities' action plan are quite unique, there are common focused-issues, namely capacity building for teachers, integration of environmental education in school subjects, awareness raising, publication and dissemination of information, and specifically for Phnom Penh the establishment of a school-based waste management system and green space in school compounds.

Please refer to Annex A-I of the comparison of two action plans of Hanoi and Phnom Penh.

3 Results

Over three years, AWAREE project resulted in the establishment of a Steering Committee or Task Force of AWAREE in both cities, development of AWAREE action plans; eight Technical Advisory Services initiatives were organized, with the dispatch of nine Yokohama officials, six Secretariat and five external institutions to Phnom Penh, and nine Yokohama officials, seven Secretariat and two external institutions to Hanoi. Two training and study visit programmes were also held in Yokohama with the participation of six persons each from Phnom Penh and Hanoi.

Moreover, two south-south training programmes organized in both cities were attended by four teachers/principles. A total of six public forums/workshops/public hearings were held in the three cities - Yokohama, Phnom Penh, and Hanoi, which were attended by

more than 700 participants representing city governments, teachers/principles, local leaders, ordinary citizens, and others. Training-for-trainers were also organized by each city benefiting both school teachers and members of the local community.

Results of AWAREE in both cities are also diverse, which is evidence that environmental education clearly reflects the local economic and social-cultural contexts. Limitation of educational materials, particularly in Phnom Penh, forced schools to be more creative in implementing environmental education activities. The localized storybooks – drawing books by teachers and by students – were created and were used in schools, and used not only as reading material, but also as teaching materials. The approach also raised much interest amongst students and helped in embedding environmental concerns in the students. Phnom Penh's approach also impressed teachers from Hanoi during the south-south exchange.

Phnom Penh's decision to embark on waste-segregation in schools is another example of a focused area that is not found in Hanoi. Money collected from recyclable waste was used for school facilities and supporting poor students. After completion of the project, one pilot school has been collecting funds to start a rainwater harvesting programme. Schools have also become the platform for the DOE to help collect household hazardous waste (for example, dry batteries from home).

When comparing teaching methodologies, Hanoi had more advanced skills than Phnom Penh. Hanoi schools in general had better facilities and during AWAREE project were able to raise their creativity in integrating environmental education in school subjects, including the use of English, which were not yet found in Phnom Penh. Trainings, public fora and workshops held in Hanoi were attended by many teachers, of whom more than 60 percent were female. As Hanoi schools in general have better resources, a lot of activities targeting elementary and secondary schools were organized, such as environmental education contests between schools, and outdoor activities. Although DOET initially thought to focus AWAREE on the middle and high school levels, on the advice of Yokohama, DOET decided to also bring in elementary schools as a target group.

Transferring Japanese technology and know-how to developing countries has always been a challenge. As CITYNET incorporates sustainability dimensions as a top priority when implementing its activities, the strength of this project was on the common

agreement amongst all parties involved that the project would use local-materials available as much as possible. The Japanese side's attitude for trying to understand local context also contributed to reach the goal. When officials from Yokohama showed the experiment of acid and alkali using detergent and purple garbage, local teachers and students were quite impressed. Although acid and alkali was taught at middle schools in Hanoi, but it was only through text books without experimentation.

In general, the outputs/outcomes brought by AWAREE project can be classified as follow:

Table A2 Brief results of AWAREE in Phnom Penh and Hanoi

Phnom Penh	Hanoi
From schools: –4 EE pilot schools in 2005, increased to 11 in 2006 and 145 in 2007. –Schools were mobilised to implement EE. –First production of EE storybooks by students. –EE contests held (drawing competition, etc.). –Waste segregation, recycle and composting. –More greenery in schools. –EE materials produced and disseminated. –Creation of biotopes. **To the community:** –Child-friendly schools are parent-friendly schools. –Decrease in litter on some roads and communities. –Measures on avoiding littering were addressed. –Greater willingness to participate in EE. –Amended regulations and established local acts. –Public campaigns held with high participation. –EE materials produced and disseminated. **Other:** –Connecting EE into poverty reduction programme. –Steering Committee on EE was formed – comprised of DOE, DOEYS, and MPPP.	**Public & Schools:** –Much better knowledge. –More resource allocated for EE. –Leaders were encouraged to take up EE. –Many activities were implemented. –More EE activities were held at all schools. –Integrated EE and formulated cross-curriculum in all subjects at all schools in Hanoi. **Awareness at home:** –Paid more attention on EE at home. –Set rules of disposing garbage for children. –Improving awareness on EE. –Making the house tidy. –Remind everybody to save energy. –Remember to turn off lights. –Save water all the time. **Collaboration and cooperation:** –Great changes in collaboration with MOET, URENCO, NGOs, and other organisations. –Some clubs of these organisations were opened and activities were held at schools. **Partnership with other cities:** –Shared experience & expertise among AWAREE cities. –Promoted partnerships between Japanese and other Asia-Pacific cities on EE using the concept of city-to-city cooperation for continuous learning.

		Materials and Media:
		–Richer in resources of EE, including on environment & wild animals protection.
		–Posters, leaflets, and other information including those funded by CITYNET published & delivered.

Source: CITYNET (2007)

4 Elements that contributed to the success of city-to-city cooperation

Key elements that contributed to the success of C2C cooperation were identified and reviewed. Although it is difficult to quantify each element, however, the findings can be used as the basis for justifying and conducting C2C cooperation. Table A3 indicates the availability of each element in the case of Phnom Penh and Hanoi based on the author's perception and observations.

Table A3 Presentation of Elements of C2C Cooperation in Phnom Penh and Hanoi

No	Elements	Hanoi	Phnom Penh
1.	Commitment to link	High	High
2.	Community-wide participation	Medium	Medium
3.	Understanding	High	High
4.	Reciprocity	Medium	Medium
5.	Result through real examples	High (North-South and South-South)	High (North-South and South-South)
6.	Political support from higher level of governments	Medium	Medium
7.	Consistent leadership	Medium	High
8.	Cost sharing and cost effectiveness	High	High
9.	Free flows of information	Low	Low

The following described further with regard to each element.

(1) Commitment to Link

Commitment to link with other cities and institutions/organisations existed and was high in both cities, as both cities were members of CITYNET for a long time (Hanoi joined in

1989, Phnom Penh in 2002) in which their relationships with CITYNET were already formalized and institutionalized. Both applied for and expressed their interest to join the project of C2C cooperation. Furthermore, both cities had to sign the Memoranda of Cooperation that outlined the objectives, requirements, as well as expectation from the project. In term of departments involved, Phnom Penh had more departments participated (DOEYS and DOE), while in the case of Hanoi, only one Department (DOET) was solely implementer of the project. Strong commitment also continued after the project ended. Focal persons of AWAREE at DOET and DOEYS in Phnom Penh, both were promoted to Director Level by the Governor, partly due to their dedication to their work. Both have been exposed and continued to spread the message of environmental education in international fora.

Commitment to link with various other institutions was also spurred. DOET began its collaboration with WWF (World Wildlife Fund) on environmental education by organizing a travelling exhibit held in various schools.

(2) Community-wide participation

Although the project was expected to have wide-participation of the community, based on targeted groups identified by both beneficiary cities, participation of stakeholders was limited to school teachers, head masters, students as well as local government officials responsible for environment and education. However, both cities were able to learn about community-wide participation from Yokohama, which has more than 2,500 environmental voluntary groups. Inspiring by Yokohama, Phnom Penh schools began to invite people from NGOs to speak and interact with students. Schools in Hanoi also planned excursion activities to places where teachers had never thought before, such as a composting factory and disposal sites. Students were able to learn more about solid waste distribution from households to final disposal point, as well as about activities to minimize waste. . The idea came when teachers from Hanoi visited open dumping sites in Phnom Penh as part of south-south exchange under the project.

Phnom Penh's school-based waste segregation has also been supported by a private company (CINTRIN) which collected the school's garbage free of charge.

(3) Understanding

Clear understanding of the project and its expectations was set from early stages of the project, in the form of "Calls for Participation," which was followed by signing of a Memorandum of Cooperation that clearly outlined the objectives and expected outputs. Understanding of the project's expectation was also verified during the visits of the team from Yokohama, and continues communication by the CITYNET Secretariat to the three cities.

As there were many officials dispatched from Yokohama to ensure the continuity and clear understanding among them, regular meetings between those who visited and those who were to visit were also held. Regular discussions/meetings were also organized to update them on the progress with the project.

(4) Reciprocity

C2C cooperation would not have been success without mutual interest and willingness for all cities to collaborate and reciprocate the benefits that they earned. It is hard to ensure fairness on reciprocity as recipient cities tend to benefit more in such cooperation efforts. From the project results, there was no doubt that both cities, Hanoi and Phnom Penh, gained considerable benefits from AWAREE in different ways.

Benefits received by Yokohama City Government were lesser. As it is challenging to put costs and benefits in monetary value, AWAREE project helped promoted Yokohama that had declared itself as an international city amongst teachers and students. From the reflections of 12 city officials who were either dispatched to beneficiary cities or were involved in training and study visit programmes in Yokohama, all of them expressed their positive feedback to the project.

Reciprocity from Yokohama can be grouped into the following:
1) City promotion and development – quantitatively, more people in Hanoi and Phnom Penh became aware of Yokohama (as the name of City, not as "Yokohama tyre" whose sign board is often displayed in many Asian countries). Moreover, AWAREE also provided a better image for Yokohama as an international city. Through public fora held in Yokohama, the understanding of Japanese public about the situation in Asian cities also improved, as reflected from the evaluations collected during the fora. Through these efforts, they were encouraged to keep up their good work in all possible forms and participate in

international cooperation with cities across borders, as many of them had wished.

2) Institutional capacity development – as reflected by the fact that Yokohama City had just released the Environmental Education Action Plan as a new approach. Yokohama as a whole was able to experiment their pro-active attitude by demonstrating the usage of the Plan not only to their citizens during the public fora held in Yokohama, but also to people in Hanoi and Phnom Penh.

3) Individual capacity development – this aspect was probably the direct benefit that Yokohama City attained. Many of city officials dispatched from Yokohama had not been in Phnom Penh and or Hanoi, and even constituted their first business trip for some of them.. From their reflections, they commented that the project raised their confidence in dealing with their own day-to-day tasks; and that they also become more creative as they had to find ways of teaching methodology for teachers in Phnom Penh and Hanoi using available local materials. They also felt the project complemented the products they produced, including the "Green Environmental Learning Field Map."

(5) Result through real examples

During the development of the project, Yokohama City had given much attention to environmental education as the City had been preparing to implement the "Yokohama City Environmental Education Basic Policy." As the City had experience in environmental education over decades, it was possible for teachers and officials from Hanoi and Phnom Penh to see the real examples and learnt about Yokohama's history as it developed from a "polluted city" to that of a "clean and beautiful city." Learning from history also helped beneficiary cities to not repeat the same mistakes of Yokohama.

(6) Political support from higher levels of government

This is an element rarely found in projects developed and implemented by CITYNET as the Network deals mostly with local governments at the municipal or city level. However, the project verified that this element contributed to the success of the project as the involvement of JICA provided the opportunity for CITYNET to engage with the national government entities where the recipient cities were located. As part of JICA's

requirement, national governments also had to endorse the project. Such a project requirement provide valuable lessons for CITYNET and for the cities themselves, in interacting and working with national government entities, and provide good exposure to the theme and issues at the national level. It also helped in highlighting the importance of C2C cooperation for urban development.

Although there were no policy implications of such support, the national governments were made aware about the project. During the courtesy visit to the State Secretary of the Ministry of Education, Youth and Sport (MOEYS) of Cambodia, he expressed his desire to develop textbooks on environmental education and a guidebook for teachers on teaching environmental education for the whole country. During another meeting with the MOEYS of Cambodia, there was also agreement to plan and establish a "Faculty for Environmental Study" after talking to the Municipality of Phnom Penh and Yokohama's team. During a courtesy visit to the State Secretary of the Ministry of Environment of Cambodia, he also expected that the project would be expanded to other cities outside Phnom Penh.

(7) Consistent leadership

This element was assured from the beginning of the project, since the Mayor of Hanoi and Governor of Phnom Penh signed agreements with the CITYNET Secretariat and pledged their commitment to ensuring the strong and complete implementation of the project. As the cities were committed since they first joined CITYNET, members were familiar with the process that CITYNET undertakes when they participate in the network's activities. Furthermore, the CITYNET focal point for each member city is assigned by the respective head of the local government, and is usually either the mayor or the second person in charge, within the city government.

Compared to Hanoi, Phnom Penh's leadership was more visible as demonstrated by the presence of the Vice Governors in meetings, public fora/workshops, and continuous inspections of and guidance from the Governor, as well as from the Ministry during the AWAREE's implementation. Consistent leadership shown by Phnom Penh Municipality has also contributed to partnership building among relevant departments especially DOE and DOEYS. While in Hanoi, AWAREE was mainly carried out by DOET.

(8) Cost sharing and cost effectiveness

This element has always been a key strategy of CITYNET in implementing its projects and programmes, to ensure commitment and ownership of parties involved. Cost sharing and cost effectiveness were reflected in requirements/conditions such as compulsory allocation of funds to implement the AWAREE action plan identified and developed by each city. Project funds were essentially used for discussion and exchange of personnel among the cities, and other specific local activities were to be funded by the respective cities.

(9) Free flows of information

Due to the language differences, direct interactions among three cities, Yokohama, Phnom Penh and Hanoi were made during face-to-face meetings, mostly with the help of interpreters. Face-to-face interactions, and monitoring and evaluation allowed all parties involved to participate in free discussions and exchange. The role of CITYNET Secretariat was important to bridge the communication gaps resulting from language, and cultural and social backgrounds.

5 Conclusion

The concept of environmental education has evolved since the early 1970s. Although the project was designed without taking into account the more recent and contemporary concept of "Education for Sustainable Development (ESD)[55]" ESD came to the fore as a concept that evolved from better understanding of the broader implications of environmental education. However, the transfers and lessons learnt from AWAREE inherently reflected the concept of ESD in many contexts. AWAREE was based on the principles and values of sustainability, and dealt with the combined well being of environment, society and economy, as well as adopted the local and culture values and helped fulfil the local needs, perceptions, and conditions. Moreover, AWAREE also promoted life-long learning and engaged both formal and non-formal forms of education.

CITYNET as one of the international networks for sustainable cities in Asia has a formalized relationship with its members when they join the Network. While

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[55] The United Nations Decade of Education for Sustainable Development was proposed and endorsed at the World Summit on Sustainable Development held in Johannesburg in 2002 and in December of the same year, UNESCO was designated as the lead agency.

institutionalizing relationships have been made over the years, it continues to be a challenge for CITYNET to keep up the momentum for cities to adopt the mission of the Network, as leadership's change, high turnover personnel within city governments, as well as limitation of the 3Ms mentioned by Phnom Penh's delegate: Money, Materials and Men (reflecting human resources).

Reviewing the key elements of C2C cooperation despite its difficulty to measure exact degree of those elements (for example in monetary value), may help other international networks as well as policy makers to embark more effective cooperation with other cities across borders. It is hoped that more research is carried out to help different resource organisations, including development aid agencies, to make use of resources and funds more effectively.

Although it may take more than a decade to see the full impact of the project on students and ordinary citizens, AWAREE, within its limitations and barriers, is clear evidence that education is a 'universal treasure' as noted by Yokohama City officials who said, "The twinkle in the eyes of students when they learnt about environment is the same in Yokohama, Phnom Penh and Hanoi."

Annex A-I. Comparison of Action Plan of Hanoi and Phnom Penh

No	Subject	Hanoi	Phnom Penh
1	Goal	It aimed to improve awareness and enhance understanding on environmental issues of teachers and students in schools	To improve awareness and enhance understanding on environmental issues, aiming at the achievement environment protection and conservation of natural resources through the environmental education process linking with the poverty reduction.
2	Objectives	1) To assess real situation of environmental protection and education in schools 2) To improve awareness and build up capacity for educational administrators and teachers for better environmental education in schools 3) To integrate and develop environmental protection and education through formal and formal education 4) To learn, exchange and share experience between Hanoi and other cities to enhance awareness on environmental education in schools 5) To promote partnership on environmental education between Japan and other Asian Pacific cities 6) To coordinate with other relevant departments in Hanoi on awareness enhancement and environmental education	1) To enhance the capacity of relevant departments and schools 2) To integrate environmental education in the Urban Poverty Reduction Strategy and City Development Programs 3) To promote partnerships particularly between MPP and other key stakeholders concerned with environmental improvement, and establish forum for enhancing dialogue on environmental education activities 4) To pilot the environmental education process in selected primary schools and replicate the lessons learnt to others 5) To mobilize school teachers, parents, local authorities and civil society group for active participation in pilot schools-based environmental programmes
3	Expected outputs	1) Hanoi will be able to come out with effective environmental education at schools 2) Primary, secondary and high school students have better understanding on environment and environment protection 3) Positive change in awareness and behaviours of students and teachers on environmental protection 4) Environmental education publicity documents are published and disseminated 5) Integrate and develop environmental protection and education through formal and non formal education	1) Effective and efficient institution of Municipality of Phnom Penh for environmental education activities 2) Better understanding on environmental issues emphasizing on "Clean Land, Clean Water and Clean Air" through primary and secondary school students 3) Environmental education lessons included in the primary and secondary level curriculum and be used at selected primary and secondary schools 4) Competent teachers and trainers on Environmental Education process in particular on preparation of IEC and teaching aids;

		6) Most of educational management officials and mainstay teachers in schools are trained and cultivated to have better understanding on environmental education 7) To promote environmental education activities in Hanoi through close cooperation between AWAREE participating cities	teaching methods through formal and non-formal education; promote awareness on environmental information through child-to-parent approach 5) Better understanding of law and regulations and its implementations of environmental protection emphasizing on solid waste management 6) Integrated environmental education lessons into the Urban Poverty Reduction Strategy 7) Established collaborative network mechanism (partnership development, forums, working groups etc) for Environmental Education
4	Overall action plan per year		
4.1.	First year 2005	1) Investigate and assess real situation of environmental education in schools 2) Compose and publish environmental education documents for all school level 3) Organise training classes for administrators and mainstay teachers	
4.2.	Second Year 2006	1) Start integrating environmental education activities in formal and non-formal classes 2) Organise seminar on integrating and training 3) Monitor activities at schools, find out the problems, assess the first-step results	
4.3.	Third Year 2007	1) Investigate, assess progress of students and teachers 2) Assess training and teaching process. Assess results obtained after two years of the project 3) Organise seminars to draw out experiences 4) Finalise and proceed to next steps of the project	
5.	Detailed action plan		
		1) Assess the status of environmental education at schools	1) Capacity Building
		- select mainstay teachers to join environmental education investigation (2 persons from each school)	*- Selection of Trainers on EE from Departments of Education and Environment; (two each from Department of Environment -DOE-*

	- Select a few schools from 3 school levels (primary, secondary, high school) to join the real situation investigation - Investigate environmental issues in school compound through survey questions or questionnaires for administrators - Prepare questionnaire and report to CITYNET	and Department of Education, Youth and Sports -DoEYS- per year) - Training of Trainers (in collaboration with Yokohama and CITYNET- AWAREE Project) (two each from DOE and DoEYS per year) - Training of Trainers in Phnom Penh City - Training of Teachers from selected primary and secondary schools (two each from both schools every year)
	2) Enhance awareness and capacity of education administrators, teachers	2) Development of Lessons on EE for Primary and Secondary Level Schools
	- Increase awareness among schoolteachers on the importance of environment - Organise the workshop among schoolteachers (2 teachers/school, 2 days/level) - Organize the conference for school administrators (265 people, 2 days each period) - Organize specialist-training courses (cooperate with Yokohama and CITYNET /AWAREE project; 2 people each year) - Train mainstay teachers for selected schools – 2 people each year - Organize the conference that aims to see the progress.	- Prepare key contents and outlines for lessons, aiming at better understanding on environmental issues, problems and impacts; laws and regulations. - Integrate the EE lesson into all major subjects at the primary and secondary schools - Conduct the needs assessment of IEC materials required. - Production of IEC materials, supplementary readers, teaching aids, and teachers' guides
	3) Integrate environmental education in all compulsory subjects and outdoor activities	3) Provision of environmental education equipments at selected schools
	- Train environmental education content through indoor and outdoor lessons - Test teaching and draw out experiences - Emphasis on two main aspects: Campaign on environmental protection and conservation * Campaign on environmental protection for students * Organize contest on environmental issues * Report writing guiding on environmental issues. Educate the importance of environment and nature protection through non-formal education	- Conduct needs assessments at pilot schools to find out EE equipments and IEC materials required. - Construction and provision of EE equipments based on the results of needs assessment. - Practical training of application of EE equipments

* Organize outdoor activities and sight seeing.

	4) Cooperate with parents and youth/pioneer organisations, departments	4) Teaching environmental education at selected primary and secondary schools (2 schools every year)
	- Organize conference for students and parents by head masters *- Conduct exchange programmes between Department of Education and Training (DOET) and other relevant organisations*	*- EE lessons be integrated in the existing major subjects* *- Practice for better behaviours of the students on environmental issues through EE.* *- Practical lessons on EE equipments* *- Environment watch practices in school compound and neighbourhood* *- Train the class leader on environment control* *- Observation/ study visit/study tour to increase the awareness of students on environmental issues* *- Participate in the public activities for Environmental Awareness* *- Knowledge competition on EE*
	5) Share experience and expertise between Hanoi and other cities	5) Awareness promotion on regulation and ordinance of solid waste management and environmental protection
	- Send teachers abroad to study the experience of other cities *- Teach Japanese language in some schools* *- Get books /materials about environment from Japanese cities* *- Organize the essay contest between Hanoi and other foreign cities*	*- Awareness promotion on regulation and ordinance of solid waste management and environmental protection* *- Teaching on regulations and ordinance emphasizing on the civic rules in simple ways by DOE* *- Practicing of environmental laws and enforcement in school compound* *- Observation and study visits to public places (for law enforcement activities)*
	6) Promote partnership between Hanoi and Japanese cities	6) Establish the school-based waste management system and green space in school compound
	- Ask Vietnamese Government to send head masters to go to Japan to learn and exchange experience about environmental protection *- Invite some foreign experts to Hanoi to talk about environment*	*- Identify model schools for school-based waste management system* *- Develop the rules and regulations on waste minimization in participatory approach for school-based waste management* *- Construction of facilities for garbage bins, waste separation (paper, plastic, metal, organic materials), and mini-composting process* *- Integrate waste management lessons (rules and regulations, waste minimization, waste separation, collection and disposal*

		procedures) into the EE *- Plant trees, establish garden and green space in school compound and link them with teaching purposes.* *- Competition for school-based waste management application (three communes, 20 villages) and green space establishment*
	7) Publish and disseminate information on environmental education	7) Publication and Dissemination of Information on EE
	- Publish and disseminate leaflet on AWAREE project *- Publish and disseminate guide for teachers on environment at schools* *- Prepare storybooks for children at primary school. learn and exchange experience about environmental protection*	*- Publish and disseminate the leaflet of AWAREE, incorporated the existing projects in MPP (in Khmer and English)* *- Public awareness promotion through City TV and Radio* *- Introduce EE activities on the Municipality of Phnom Penh Web page* *- Dissemination of IEC materials through children-to-parents* *- Information boards (bulletins) at selected schools* *- Press shows and press releases through local newspapers*
	8) Conduct monitoring and assessing activities	8) Conference and Workshops
	- Supervise Environmental Education activities in schools. *- Investigate and evaluate periodically.* *- Inform the results to CITYNET*	*- Communication and sensitization forum on the AWAREE Project and environmental education Action Plan, targeting the local authorities, NGOs, and communities (200 targeted participants).* *- Two workshops in the year 2005 for adoption of EE policies in City Development Plan and Urban Poverty Reduction Strategy (30 MPP officers to be targeted)* *- One workshop a year on EE lessons, school-based solid waste management system, and green space promotion (30-50 school directors, teachers, staff of DoEYS and DOE and district officers)* *- Two conferences on Lessons Learnt from environmental education Activities in Phnom Penh and other Cities (100 targeted participants including more teachers)* *- Two review workshops on EE Activities in Phnom Penh City (end of each year)*
		9) Monitoring and Evaluation
		- Set up the monitoring indicators and methods *- Develop and conduct the continuous monitoring system* *- Develop the impact assessment procedure and assess the impact*

			(base-line survey and end-of-project survey) *- Yearly evaluation and end-of-the-project evaluation*
6.	Timeframe	January 2005 – December 2007	January 2005 – December 2007
7.	Other information: Strategies for implementation		* Financial Resource Mobilization
			- The Municipality of Phnom Penh (MPP) will lead and cooperate with relevant government agencies for financial resource mobilization *- MPP will collaborate with donor communities, International Organisations, NGOs and the City Development partner organisations for financial support to the EE Action Plan* *- MPP will mobilize the financial contribution from Civil Societies, private sector (local and international business associations), fund mobilization and donation through civic activities*
			* Implementation Strategy
			- Build up capacity and commitments of key stakeholders on EE *- Improve existing lessons and teaching methods and materials on EE* *- Select the schools based on the criteria and upgrade existing facilities* *- Integrate the action plan with currently actively City Development Projects/Programmes and other possible activities* *- Learning through practicing better behaviours and exercises* *- Replicate the lessons learnt and apply "Learning and Innovation Approaches" for future expansion*
			* Implementation Structure
			1. Steering Committee (Management Team) *- Comprised of key stakeholders and relevant government departments* *- Be responsible for overall management, policy guidelines, supervision and monitoring;* *- Coordinate and cooperate with donor agencies, IO/NGOs, existing city development project teams, and Civil Associations*

75

- Mobilize financial resources
- Communicate with CITYNET, Yokohama City and other AWAREE participating cities

2. Working groups/ Task Forces (Support Teams)
- Several Working Groups will be formed as per required; such as Financial Resource Mobilization Working Group, Lesson Plan Preparation Working Group, Law and Regulation Enforcement Working Group, School-based Waste Management Working Group, Green-Space Working Groups, School Competition Management Working Group and etc. (another idea was proposed to divide the working group by items, such as Capacity Building Working Group, Teaching and Development Lessons Working Group, Dissemination of Information Working Group and so forth. The detail decision is up to Steering Committee)
- Composed with representatives from departments of education, environment, respective local authorities and existing project management teams related with EE activities in Phnom Penh City
- Each working group will be responsible for the assigned tasks

3. School Supervision Committee (Field Supervision Team)
- Comprised of representatives from departments of education and environment and representatives of District and Commune Authorities
- Responsible for close supervision of school-based EE activities and administrative and technical supports to school teams
- On-going monitoring and impact assessment

4. School-based Teams inside the Schools (Implementation Teams)
- Comprised of School Director, EE Teachers and representative of Parents - Teachers Association (PTA) and School Committee
- Be responsible for implementation of EE action plans at school level
- Establishment and supervision of school-based waste

management system and green space in school compound.

Source: Adopted from CITYNET (2007). AWAREE Project: Awareness on Environmental Education in Asian Cities, Project Report: 2004-2007.

Appendix 2: Questionnaire used in the survey

Questionnaire on the Kitakyushu Initiative Network (KIN)

The Secretariat of the Kitakyushu Initiative Network (KIN) requests the member local governments to answer the following questions regarding the KIN function in its past activities from 2000 to 2007. The information provided in the questionnaire will be used for formulating better actions and coordination for future events.

Please submit this form by November 23, 2007 by e-mail or fax to the KIN Secretariat at:

Institute for Global Environmental Strategies, Kitakyushu Office
Tel. +81-93-513-3711, Fax. +81-93-513-3712, E-mail: kitakyushu-initiative@iges.or.jp

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1. What were the benefits for your city by participating in the Kitakyushu Initiative Network (KIN) or other similar international intercity networks so far in line with your city's environmental priorities? Please specify the network when you explain the applicable cases.

(1) What were the direct benefits? (e.g. financial and technical supports)

(2) What were the indirect benefits? (e.g. status of your environmental division improved, access to funds improved, many useful information obtained, management capacity of staff improved)

2. Have you received any queries from other cities on a good practice in your city utilizing the network of the KIN or other international intercity networks? If yes, state from which cities on what practice. Has your city's good practice replicated in any other cities? If yes, please state at where and how. Please specify the network when you explain the applicable cases.

3. Has your city made any queries to other cities or the secretariat on a good practice utilizing the network of the KIN or other international intercity networks? If yes, state to which cities or secretariat on what practice. Has your city made study visits to, sent trainees to, or received any experts from other cities, through the network of the KIN or other international intercity networks? If yes, please explain the outlines of such city-to-city cooperation. Please specify the network when you explain the applicable cases.

Date		Country	
Name		City	
Signature		Designation	

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