

**Enhancing low-carbon development through
international co-operation between cities in
Japan and in Asian developing countries: Roles
and activities for an international platform on
low-carbon cities in Asia**

IGES Discussion Paper



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Abstract

Local governments play an important role in promoting low-carbon development; however their role could be significantly enhanced by greater international co-operation between cities. There are already a few networks or platforms for Asia-focused co-operation operated by Japanese cities. However, further consideration is still needed regarding the kinds of activities to be the focus of co-operation and ideas for how such networks or platforms will function. This paper will discuss several factors that should be taken into account when designing such networks or platforms, and it will recommend what kinds of activities might be appropriate for them to take up effectively.

A key message of this paper is that intercity platforms need to be mutually beneficial in order to be effective. In the context of Asian developing countries, it is difficult for cities to focus only on low-carbon measures, so it is important that these activities are integrated with broader development objectives. Moreover, the participation of Japanese cities also increasingly depends on obtaining concrete benefits for themselves, especially due to increasing fiscal constraints.

This paper proposes four potential kinds of activities that could be implemented among participating cities in an international intercity platform for Asian low-carbon development. The first is technical co-operation on low-carbon policies and practices, and the second is collaboration to promote low-carbon environment and energy business in developing Asia. The third is joint carbon credit projects, which might be considered once Japanese local governments are faced with mandatory emissions cap. The fourth activity is carbon offsetting, which could be considered when Japanese local governments are interested in promoting environmental education and awareness raising. Collaboration among networks is desired to effectively use limited resources and to best utilise the complementary roles of different platforms in terms of expertise and access to member cities.

The priority area of technical co-operation would include the practices in the sectors of building and corporate energy efficiency, household consumption, waste and wastewater treatment, and transport as well as policies such as incentive mechanisms, regulation, information provision and education in each sector and action planning for low-carbon development. The focus of low-carbon business promotion could be energy efficiency in building and corporate and energy-efficient electric appliances in households, as well as cleaner production, recycling and pollution reduction in industry.

Another key message is that the Japanese government should provide financial support for an international intercity platform for low-carbon development, especially for secretariat personnel. Responsibilities of the secretariat would include identification of specific co-benefit type

low-carbon development programmes appropriate for developing Asia, linking local governments with funding opportunities, coordination of technical assistance from Japanese local governments, and development of capacity for measurement and reporting of greenhouse gas (GHG) emissions reduction in developing countries. It is difficult for cities to coordinate and fund this kind of co-operation on their own.

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List of Abbreviations

BDF	biodiesel fuel
CDM	clean development mechanism
CO ₂	carbon dioxide
ESC	Environmentally Sustainable City
ESCO	energy service company
GHG	greenhouse gas
ICLEI	International Council for Local Environmental Initiatives
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
K-RIP	Kyushu Recycle and Environmental Industry Plaza
LRT	Light Railway Transit
METI	Ministry of Economy, Trade and Industry of Japan
MOE	Ministry of the Environment, Japan
MOU	Memorandum of Understanding
ODA	official development assistance
PCLCC	Promotion Council for the Low Carbon Cities
PV	photovoltaic
RIT	Regional Industry Tie-up Program
SME	small and medium enterprises
UNEP	United Nations Environment Programme
VER	Verified Emissions Reduction

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1 Role of cities in Asian low-carbon development and international co-operation between cities

Asian developing countries are challenged with diverse issues of sustainable development such as poverty, industrial pollution, and adaptation to climate change. Economic development and urbanisation in Asian countries such as China and India will cause increasing carbon dioxide emissions. The low carbon development path provides Asian cities with the opportunity to avoid a future society dependent on high energy consumption.

The recent international negotiation on climate change showed difficulties for national governments to reach an effective agreement on climate change mitigation. In order to facilitate local initiatives towards low-carbon development in Asian developing countries, it is desirable to have an international intercity platform since such collaborative activities among cities have potential to realise the effects which may not happen without collaboration and networking. International co-operation between cities is desirable because the results of such collaboration includes dissemination and transfer of knowledge, policies and practices; development of joint projects in business and research; and increasing the international presence of the city (Nakamura, Elder and Mori 2010; Fujikura et al. 2010). It should be explored what local governments can do to solve the issue of global climate change mitigation through their collaboration to best utilise the potential of local initiatives.

2 Initiatives for Asian low-carbon development

The Japanese government has pursued several initiatives to support low-carbon society development in Asia, including financial assistance called Cool Earth Partnership. Japan International Cooperation Agency (JICA) is striving to promote developmental co-operation that has co-benefit to climate change mitigation. Recently, the Japanese government also announced the Hatoyama Initiative to assist climate change policy in developing countries. Ministry of the Environment, Japan (MOE), is going to support Asian low-carbon development through the newly launched Clean Asia Initiative¹. Ministry of Economy, Trade and Industry of Japan (METI) and MOE have also advocated Asian Economic and Environmental Community Concept to spread Japanese standards to Asian countries by deploying Japanese environmental technologies, regulations and capacity building². The Minister of Foreign Affairs of Japan was advised to promote the strategic utilisation of official development assistance (ODA) for effective partnership between public and private entities³, which could apply to overseas business promotion of environmental industry.

The High Level Seminar on Environmentally Sustainable Cities (ESC), held in Jakarta, Indonesia in March 2010, under the East Asia Summit Environment Minister Meeting, also confirmed that the formation of ESC was a priority agenda in Asia and strengthening support to intercity networks was recommended⁴. Nevertheless, concrete ideas to engage cities and local governments into these new initiatives are not decided yet.

Several Japanese local governments have operated international intercity platforms such as the Kitakyushu Initiative for a Clean Environment - hosted by Kitakyushu City Government, and CITYNET - chaired by Yokohama City Government⁵. The Kitakyushu Initiative has been supported directly by MOE, and indirectly by Ministry of Foreign Affairs of Japan through United Nations Economic and Social Commission for Asia Pacific. The Kitakyushu Initiative will end its activities in March 2010, and it is currently under discussion to create a new Asian City Network for Environment Improvement⁶ to utilise the Kitakyushu Initiative's intercity network comprising around 60 cities. In addition, Kitakyushu City Government will establish the Kitakyushu Asian Center for Low Carbon Society in fiscal year 2010 to disseminate environmental technologies of Japan to other Asian countries in collaboration with businesses. Yet the concrete programmes for intercity collaboration are not determined yet.

3 Potential activities for an international intercity platform for low-carbon development

The issue for a platform is what it will actually do and what its function should be. The possible ideas of Asian intercity collaboration for low-carbon development are still under development and there is room for further elaboration regarding the platform's functions and activities (Kitakyushu City 2010, Tjandradewi 2010). The Kitakyushu Initiative already succeeded in diffusion of the practice of composting organic waste (Maeda 2009), but it is important to generate more ideas for low-carbon development policies and practices that could be diffused through intercity platforms. What kinds of activities are best done cooperatively, and could benefit from mediation and facilitation by a platform? This question shall be addressed to realise the potential of intercity collaboration.

The secretariat of International Council for Local Environmental Initiatives (ICLEI) Global points out there are several important sectors such as waste, transportation and building over which local governments have some command and can effectively lower GHG emissions at relatively low cost⁷. MOE also identifies the critical roles of local governments in public engagement and urban design for low-carbon development⁸. The functions and activities of

international intercity collaboration need to be clarified to enhance the capacity and actions of local governments in these identified sectors.

The surrounding context in which cities in developing countries are situated is to be considered, too, to examine the possibility of international intercity collaboration on low-carbon development. It is difficult for cities in Asian developing countries to implement policies that are solely aiming at construction of low-carbon society because they have to priorities more pressing development issues. Therefore it is important to integrate climate change mitigation efforts into general developmental policies and measures. Several pioneering cities in Asian developing countries have started low-carbon development policies and practices that also address additional problems at the same time. An international platform to support Asian cities to follow low-carbon pathways will need to address these problems.

This section assesses the potential of four collaborative activities for low-carbon development to be the focus of intercity co-operation between Japanese cities and cities in developing Asia: technical cooperation, promotion of low-carbon businesses, carbon offsetting with engagement of local stakeholders such as citizens and companies, and joint carbon credit projects of local governments.

3.1 Technical co-operation

Technical co-operation such as training of trainees in Japan and dispatching officials as experts to developing countries has been a traditional focus of the intercity co-operation. Japanese local governments can participate in technical co-operation through their existing knowledge and experiences in the sectors of waste and wastewater treatment, air pollution, building and corporate energy efficiency, household energy consumption, and public transport and environmentally-friendly vehicles, if the Japanese government provides institutional support to intercity technical co-operation on low-carbon development. These areas also correspond to the current policies and practices of low-carbon development by local governments in Asian developing countries. Such policies include incentive mechanisms, regulation, information provision and education in each relevant sector, as well as action planning and organisation and management of governmental units to promote low-carbon practices.

While Japanese local governments have contributed to JICA's technical co-operation in the field of environment such as waste management and recycling as well as air and water pollution

control, co-operation specifically aiming at addressing climate change has just started with advanced local governments (See Table 1). This may be partly because local governments are still in the stage of trial and error in terms of formulation and implementation of climate policy and may not necessarily have clear tangible outputs and achievements from these policies yet. Thus it is timely for a platform to facilitate and enhance technical co-operation of Japanese local governments in terms of low-carbon development.

Table 1 State of Japanese local governments' engagement in the JICA technical co-operation programme for the environment (2007 – 2009)

Field of co-operation	Local governments engaged	Type of co-operation
Climate change mitigation	Tokyo metropolitan government	Training in Japan
	Yokohama city	Training in Japan
	Nagoya city	Training in Japan
	Kyoto city	Training in Japan
Water pollution	Kitakyushu city	Training in Japan
	Sapporo city	Training in Japan
	Higashi-hiroshima city	Training in Japan
	Minamata city	Training in Japan
Air pollution	Osaka city	Training in Japan
	Tokyo metropolitan government	Training in Japan
	Shizuoka prefecture	Dispatching officials overseas
	Osaka prefecture	Dispatching officials overseas
Waste management and recycling	Osaka city	Training in Japan
	Hiroshima prefecture	Training in Japan
	Osaka city	Training in Japan, Dispatching officials overseas
	Fukuoka city	Training in Japan, Dispatching officials overseas
	Nagoya city	Training in Japan
	Kawasaki city	Dispatching officials overseas
	Kitakyushu city	Dispatching officials overseas
Urban environment management	Sapporo city	Dispatching officials overseas
	Kyoto city	Dispatching officials overseas
	Tokyo metropolitan government	Training in Japan
	Kanagawa prefecture	Training in Japan
	Chiba prefecture	Training in Japan
	Saitama prefecture	Training in Japan
	Yokohama city	Training in Japan
	Kawasaki city	Training in Japan
Natural environment conservation	Chiba city	Training in Japan
	Saitama city	Training in Japan
	Sapporo city	Training in Japan
	Hokkaido prefecture	Training in Japan
	Kushiro city	Training in Japan
	Obihiro city	Training in Japan

Source: JICA

Tables 2 and 3 show commonalities and differences between Japanese municipal governments⁹ and several cities in East Asian developing countries, including Dalian and Chongqing, China, Bangkok, Thailand, Jakarta, Indonesia, and Ho Chi Minh, Vietnam in terms of their policies and practices for low-carbon development. Policies such as overall planning for climate change, energy efficiency improvement programmes in the industry sector including small and medium-sized enterprises (SMEs), and awareness raising and information provision in household sector are common both in Japanese local governments and those in Asian developing countries. In contrast, Japanese local governments do not have experience in small-scale methane fermentation of biomass for energy supply or bus rapid transit, for instance. The common areas of policies and practices are primary candidates of technical co-operation fields for a platform to match the Japanese experiences and local relevance in Asian developing countries.

Table 2 Low-carbon development policies and practices of Japanese municipal government as of 2008

Area of policy	Policy tool	Contents
Household	Financial / equipment assistance	<ul style="list-style-type: none"> Financial assistance of photovoltaic (PV) household installations Lending energy efficiency tools and data analysis services
	Facility and zone development	<ul style="list-style-type: none"> Adoption of PV or solar heating in apartments Collection of waste kitchen oil and utilisation for biodiesel fuel (BDF)
	Economic instrument	<ul style="list-style-type: none"> Local level carbon tax
	Awareness raising and education	<ul style="list-style-type: none"> Consultation service for energy efficiency Children's programme on climate change and energy saving Wind farm managed or entrusted by local government Woody biomass utilisation by local government Demonstration of energy efficient houses Capacity development of distributors and maintenance engineers of renewable energy equipment
	Institutional development	<ul style="list-style-type: none"> Setting up organisations to enhance collaboration among local stakeholders Collaborative activities with citizens for climate protection and energy saving
Industry	Financial / equipment assistance	<ul style="list-style-type: none"> Assistance for biomass utilisation project
	Economic instrument	<ul style="list-style-type: none"> Introduction of cap and trade system for carbon dioxide (CO₂) emissions Carbon offsetting

		<ul style="list-style-type: none"> • Taxation to mitigate climate change • Promotion of environmental finance and investment to mitigate climate change
Buildings	Regulations	<ul style="list-style-type: none"> • Introduction of regulations on environmental evaluation system for buildings • Promotion and regulations of plantation on the roof and wall of buildings
	Financial / equipment assistance	<ul style="list-style-type: none"> • Financial assistance for high energy efficiency houses • Grant for high energy-efficient equipment
	Facility and zone development	<ul style="list-style-type: none"> • Introduction of area-based heating and cooling and co-generation
	Economic instrument	<ul style="list-style-type: none"> • Taxation to mitigate climate change • Promotion of environmental finance and investment to mitigate climate change
Transport	Regulations	<ul style="list-style-type: none"> • Regulations of personal vehicle utilisation • Parking regulation in central city areas • Introduction of transit mall • Introduction of car number regulation
	Financial / equipment assistance	<ul style="list-style-type: none"> • Grant for car sharing and bicycle utilisation
	Facility and zone development	<ul style="list-style-type: none"> • Introduction of Light Railway Transit (LRT) • Construction of exclusive or preferential lanes for buses • Construction of bicycle lanes • Operation of community buses • Introduction of park and (bus) ride • Introduction of shared rental bicycles
	Economic instrument	<ul style="list-style-type: none"> • Introduction of road pricing • Taxation to mitigate climate change
	Institutional development	<ul style="list-style-type: none"> • Sharing logistics for distribution

Source: Hosei University (2010)

Table 3 Low-carbon development policies and practices of local governments in East Asian developing countries

Area of policy	Policies and practices
Climate change planning	<ul style="list-style-type: none"> • Action plan development for climate change mitigation • Target setting for GHG emissions reduction from the city
Household	<ul style="list-style-type: none"> • Biomass utilization by farmers • Reduction of municipal waste • Composting of organic food market and community waste • Fuel switching from kerosene to liquid petroleum gas • Environmental education, awareness raising, and information provision with plain words for citizens
Industry	<ul style="list-style-type: none"> • Corporate energy efficiency programme • Corporate energy audit • Eco-Industrial Park for resource circulation and recycling
Building	<ul style="list-style-type: none"> • Eco model housing
Transport	<ul style="list-style-type: none"> • Extension of public transport such as bus rapid transit and subway

	<ul style="list-style-type: none"> • Fuel switching • Street lighting retrofitting
Urban greening	<ul style="list-style-type: none"> • Plantation • Urban park development and street planting

Source: Paper presented by each local government at the international workshop on local initiatives towards low-carbon development in Asia, on 24 February 2010.

Local governments in Asian developing countries may need to consider adopting systems to measure and report their GHG emissions, and Japanese local governments may be in a good position to provide related technical assistance.¹⁰ Japanese local governments have accumulated experience in this area since 1999 when they were required to introduce such systems. In addition, once Japanese local governments become familiar with global measurement and reporting standards such as International Local Government GHG Emissions Analysis Protocol, drafted by ICLEI in 2009, and Public Sector Accounting Reporting Standard, under preparation by World Resources Institute in 2010 (Hosei University 2010), they could share their experiences on GHG emissions estimation and monitoring.

It should be noted, however, that the number of Japanese local governments that are interested in international collaboration for low-carbon development is not large¹¹. Among 13 Eco Model Cities, which were selected out of 89 cities and municipalities by national government in 2008 and 2009 as cities that have initiated low-carbon policies and practices and have set ambitious goals and strategies to realise low-carbon city, there are four cities that have explicitly referred to international collaboration in their strategies, namely Kitakyushu Yokohama, Kyoto and Minamata. Among other cities that have applied for Eco Model City and yet have not been selected, only Kawasaki and Hiroshima mentioned international dissemination of their experiences in their proposals (See Appendix A for attitudes of these Japanese municipal governments towards international co-operation on low-carbon development).

Japanese local governments will find it increasingly difficult to implement international technical co-operation solely dependent on their own budget and human capacity. Although peer-to-peer learning among local governments would be effective for knowledge exchange, capacity development and practice diffusion to a certain degree¹², financial and personnel assistance are needed to maintain and promote such local government initiatives¹³. Since Japanese local governments are under strong pressure to reduce fiscal expenditures, international co-operation activities are currently given a low priority even in the cities that have previously participated in international co-operation. For Japanese local governments international collaboration is not easy because of personnel and fiscal constraints¹⁴. Lack of human capacity and experiences to directly communicate and coordinate with foreign

organisations is also viewed as an obstacle¹⁵. International collaboration could be possible for them when some external organisations in Japan assist in terms of communication and coordination with foreign partners.

It is therefore desirable for a platform to address these obstacles from Japanese local governments as much as possible. A platform could mediate between local governments in Japan and in Asian developing countries, and develop training programmes on technical co-operation by local governments on low-carbon city development.

The Japanese government and national level organisations such as JICA should be encouraged to authorise international co-operation for low-carbon development in Asia as a foreign policy and to provide sufficient policy commitment and institutional support for implementation to enable Japanese local governments to collaborate with local governments in Asian developing countries, for example assistance to a cooperation platform.

In collaboration with the platform secretariat, JICA could develop a training programme for Asian local governments that focuses on capacity development on low-carbon development planning and management. This could include core training at a JICA regional centre and field visits to relevant Japanese local governments so that trainees from Asian developing countries assess the current state and identify possible plans and programmes. To promote south-south co-operation among cities, a scheme of training in third country, i.e., conducting training programmes in a developing country outside of Japan, to invite trainees from several developing countries, with the support of the platform secretariat.

3.2 Promotion of low-carbon business in Asia

Japanese local governments that have accumulation of environmental and energy saving businesses that could contribute to low-carbon development in their jurisdiction would have a potential to promote international business collaboration with Asian cities such as those in China, to support Asian business development of local SMEs, which have faced the saturation of domestic markets. The examples of low-carbon businesses relevant to local government mandates include energy service companies (ESCO) in building and corporate sectors, energy-efficient electric appliances in the household sector, and perhaps environmentally-friendly vehicles in the transport sector. Business promotion is the intention of Kitakyushu City Government in launching the Kitakyushu Asian Center for Low Carbon Society. International collaboration, in this case, is not easy for Japanese local governments

without active policy and institutional support of national government and organisations such as the Industrial Cluster Programme of METI and various supporting programmes of Japan Export and Trade Organization (JETRO)¹⁶.

There are three regions in Japan that could have potential to further extend local governments' support to low-carbon business promotion in Asia based on their efforts to develop regional industrial clusters¹⁷, namely Kyushu, Kinki (Greater Osaka) and Kanto (Greater Tokyo) regions. Though the Regional Bureaus of METI and JETRO have extended their support to local governments interested in international environmental business promotion in Asia, the number of Japanese companies, in particular SMEs, which are interested in overseas business development with governmental support is limited (See Appendix B for the current state of environmental business promotion by Japanese regions and the support of METI and JETRO), and local governments still faced financial limitations. Therefore, results have been limited so far, and a more effective and efficient way of environmental business promotion is needed.

An international platform on low-carbon cities could support collaboration among neighbouring cities and between different regions in Japan in order to enhance business opportunities. Strategic alliances within and between regions in Japan¹⁸ could be another option for relevant local governments, which has not been tried yet, to overcome the limitation of resources in terms of finance and of the number of the appropriate companies in their locality. By using an intercity platform, cost reduction of operations through merger effect can be explored. Increased numbers of participating cities and companies and increased access to potential markets through a platform would increase the chance of successful business matching. It is also encouraged for the platform secretariat to develop supporting programmes that are appropriate for local governments such as international regional agreements and coordination between economy and environment bureaus within city governments.

Meanwhile, technical co-operation on environmental regulations and institutions are also relevant to business promotion. In business areas where regulations are necessary for certain technologies to be adopted, it is suggested for local governments with assets of environmental industries to consider technical co-operation on environmental regulations and institutions and to select the target countries and cities, with the aim of future business development in Asian countries. Examples of such technologies include cleaner production, recycling, and pollution treatment. Without regulations mandating recycling or pollution reduction, companies do not have strong incentives to adopt new technologies even if they are theoretically good investments that reduce operational costs, in addition to the environmental improvement.

Promoting low-carbon business in Asia would be one of the promising activities for the international platform on low-carbon city. Assistance from the national government, however, is still needed because of the current limited and scattered resources. It is desirable for Japanese local governments to use national level support and institutions provided by METI, JETRO and others as they have done so far. Collaboration on business could eventually contribute to revitalisation of the local communities in Japan through increasing exports to and direct investments in Asian developing countries. The expected supporting functions of the platform secretariat include needs and seeds survey, mediation between local governments, and matchmaking between businesses and local governments. The platform could also provide a venue for coordination of various relevant partners and provide necessary information, knowledge and services.

3.3 Joint carbon credit projects

Japanese local governments and local governments in Asian developing countries could jointly develop projects that produce carbon credits to certify the GHG emissions reduction, where Japanese local governments would purchase the carbon credits produced. This could be considered once Japanese local governments are mandated to reduce or cap their GHG emissions from their businesses and projects directly managed by them. Even in that case, they might have preference to purchase carbon credits from the market, or to implement joint projects only in Japan. Careful assessment of cost-effectiveness as well as political support from local stakeholders in Japanese cities will be required when they examine the option of joint project formulation.

3.4 Carbon offsetting with citizens' engagement

Though it is not necessary to develop international linkage between cities to encourage citizens' engagement in low-carbon development, carbon offsetting is a possible way to engage citizens with international intercity collaboration for low-carbon development to promote environmental education on climate change mitigation: Japanese local governments could offset some local events with participation and support of citizens and local enterprise, using the voluntary carbon credits produced from the GHG emissions mitigation projects in partner cities in Asian developing countries, which operates with the support of a Japanese city. This brings about another opportunity of awareness raising, environmental education and perhaps international development education to Japanese cities. At this moment, it would be difficult for Japanese

local governments to co-operate with projects in cities in Asian developing countries to implement carbon offsetting or eco-point utilisation because of the difficulties in securing initial investment and budget for operation of these projects. Japanese local governments consider that it is inappropriate to use offsetting when the validity of carbon credits is not guaranteed¹⁹. However, it might be feasible to use eco points to support low-carbon community development projects in Asia since it can be treated as a contribution which emphasises developmental effects, not as carbon offsetting for reduction of GHG emissions. In this case, ambiguity of GHG emissions reduction may not hurt the essence of collaboration. It would be better to use this contribution to projects that do not provide validated carbon credits as a tool of environmental education, in particular to promote Japanese citizens' understanding of global aspects of climate change issues.

As part of environmental education and international development education, it might be feasible for Japanese local governments to co-operate with GHG emissions reduction/absorption projects in sister cities in Asian developing countries when there is no clear declaration of obtaining carbon credits or offsetting as a benefit of co-operation. It gives citizens and local students some understanding of the global nature of climate change mitigation and the different conditions in developing countries.

Several Japanese local governments have initiated domestic inter-regional collaboration to use carbon offsetting. Such examples include: regional agreements between a) Shinjuku ward of Tokyo and Ina city of Nagano prefecture, b) Tokyo metropolitan government, Chiyoda ward of Tokyo, and Aomori prefecture, and c) Yokohama city, Yamanashi prefecture, and Doshi village of Yamanashi, where a local government in urban area supports a counterpart in a rural area either financially or in labour regarding forest management or renewable power generation with a certificate or declaration of contribution to the GHG absorption. These domestic collaborative activities could provide the basis of operation when they extend such collaboration with local governments overseas. Yet it would be difficult for Japanese local governments to communicate with their counterparts in Asia without language barriers and to monitor the project overseas. An international platform might mediate between them and provide monitoring and reporting services on behalf of counterparts in Asian developing countries.

Another theoretically possible way to engage citizens in international intercity collaboration for low-carbon development is utilization of eco-points. Japan uses an eco-point system to reward Japanese citizens' adoption of low-carbon practices such as increasing use of public transport. Eco-points could also be used to fund low-carbon projects in partner cities in Asian developing

countries. There are some difficulties in incorporating international collaboration into eco-point projects that are conducted in Japanese cities because of a) difficulties to secure initial funds that are observed in eco-point projects, b) difficulties of fiscal autonomy, and c) small amount of available initial funds compared to the necessary amount of funds needed to assist meaningful size of GHG emissions reduction project in Asian developing countries. However once the necessary funds are secured along with a sufficient number of participating Japanese citizens, a platform could provide mediation and monitoring services.

4 Roles of platform secretariat to facilitate collaboration between local governments

The existence of an effective platform secretariat is critical in terms of mediation between cities, identification of low-carbon development programmes in developing countries, development of training programme and materials to ease Japanese local governments' technical co-operation, capacity development of GHG emissions measurement to visualise the effects of international co-operation, and linking with donors' financial assistance to development programmes in developing countries to extend good practices. Japanese government and other potential donors could contribute to this institutional setup for local-level low-carbon development in Asia.

In particular for technical co-operation between local governments, it is desirable for a secretariat to link identification and formulation of co-benefit type low-carbon development programmes, measurement of GHG emissions reduction, and financial and technical support, to incorporate the different interests of developing countries and developed countries in terms of GHG emissions reduction. Of these activities, identification and formulation of low-carbon development programmes in developing countries and measurement and estimation of GHG emissions reduction can be conducted as part of capacity building for CDM implemented by JICA and IGES that are supported by Japanese national government. The point is that it is possible to utilise such existing capacity building schemes to support an intercity platform for low-carbon development, focusing on low-carbon development programmes that are executed or coordinated by local governments in Asian developing countries. Knowledge production from Japanese experiences and knowledge sharing with other countries, and coordination across the national borders could also be included in the secretariat's role. The secretariat could develop a strategic partnership with local environment research institutes that belong to Japanese local governments to produce and compile the relevant knowledge and experiences²⁰.

Regarding low-carbon business promotion, the secretariat could conduct needs and seeds surveys, mediate between local governments and provide opportunities for matchmaking

between businesses and local governments that are interested in low-carbon business promotion.

5 Role of the Japanese government

Considering the limited resources of Japanese local governments with regard to international environmental cooperation, Japanese national government should provide institutional support to make it easier for local governments to contribute to national policy, focusing on the support to the international platform that could host integrative programmes on intercity collaboration on low-carbon development, in addition to the existing project-based support. Intercity collaboration is very much in line with the objectives of the Hatoyama Initiative, so its budget could come from there. In addition, although Japanese local governments have experiences of low-carbon technology and policy in some areas such as waste and wastewater management and street lighting energy efficiency, further collaboration with third parties is needed to introduce simplified measurement and reporting of GHG emissions, especially if Japanese local governments are to extend technical co-operation to local governments in Asian countries.

6 Conclusion

Based on the above preliminary assessment of possible typologies of intercity collaboration for low-carbon development, which are summarised in Table 4, there are two major possibilities for the focus of functions and activities for the international platform for low-carbon city in Asia: technical co-operation and business promotion. Figure 1 schematically shows possible intercity collaborative activities and the associated roles of international platform on low-carbon city.

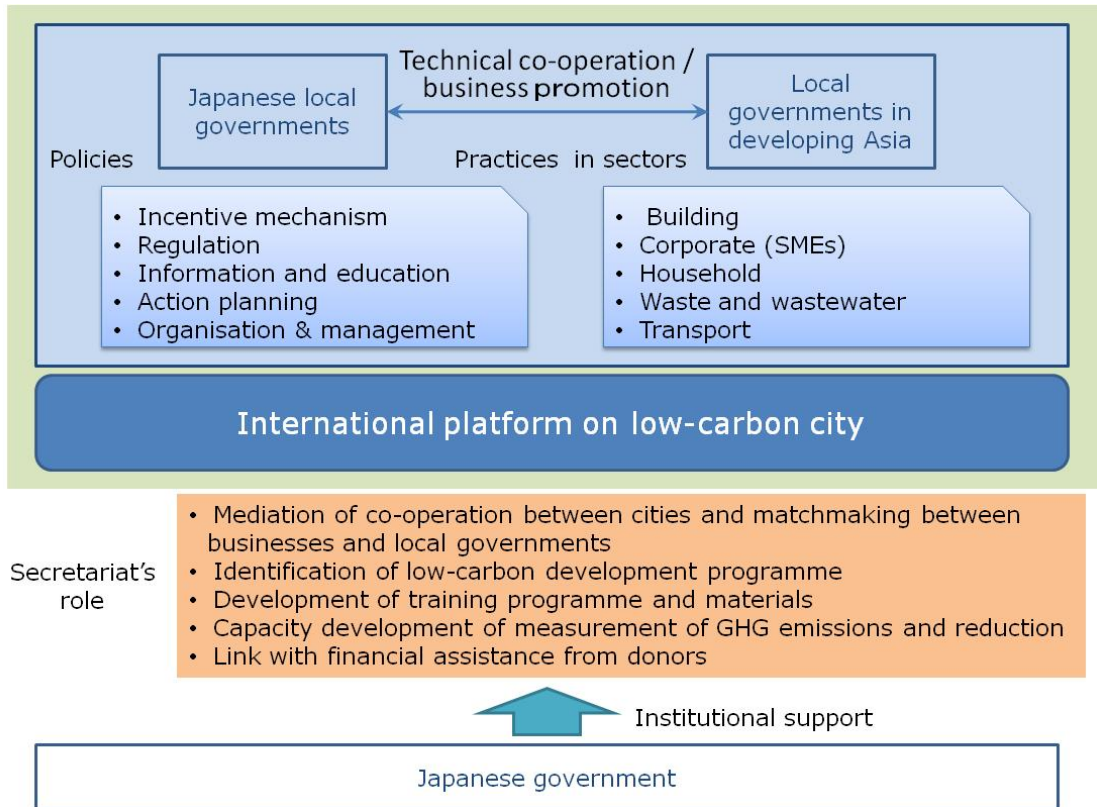
Table 4 Preliminary assessment of intercity collaboration for low-carbon development in Asia

Types of collaboration	Benefits to Japanese cities	Benefits to cities in Asian developing countries	Current supportive policy	Needed future policy	Barriers to implementation
Technical co-operation	City promotion as environment city	Capacity development	JICA's scheme	Local government-focused support	Low priority, financial constraint
Promotion of low-carbon business	New business opportunities	New business opportunities	METI / JETRO's support	Support to domestic alliances and coordination in Japan	Scattered resources, insufficient finance
Joint carbon credit project	Meet the GHG emissions	Local development	None	--	No incentive without cap

	reduction target				
Carbon offsetting with citizens' engagement	Environment / development education	Contribution to local development	JICA's scheme	--	Small amount of GHG emissions mitigation

Source: Author

Figure 1 Platform concept of international intercity low-carbon collaboration in Asia



Source: Author

One option would be technical co-operation on low-carbon policies and practices between Japanese local governments and local governments in Asian developing countries (Figure 1). On the international platform on low-carbon cities, participating local governments are expected to exchange and share policies and practices. The Japanese national government is requested to provide assistance so that the platform secretariat can provide necessary and effective support to participating cities, including mediation of cities, identification of low-carbon development programme, development of training programme and materials, capacity development of GHG emissions measurement, and linking with donors' financial assistance.

Another option would be collaborative agreements on low-carbon technology business promotion between Japanese local governments and local governments in Asian developing

countries with collaboration of businesses that have, or are willing to have, low-carbon technologies. The Japanese national government as well as business associations could assist the platform secretariat so that it can provide needs and seeds survey, mediation between local governments, and matchmaking between businesses and local governments.

In both cases, it is suggested that the Japanese government should provide institutional support to local governments with regard to financial and personnel resources, including development of a special budget account for international collaboration of local governments under the Hatoyama Initiative. Establishment of a designated office or organisation for the international platform would be desirable.

The Kitakyushu Asian Center for Low Carbon Society and Asian City Network for Environment Improvement could be a good candidate for a platform to perform the functions mentioned above. It will soon begin operations, but what projects and activities it will undertake are still under consideration.

Co-operation among platforms is also desirable. For instance, to extend networks among Japanese local governments, CITYNET could collaborate with Japan's Promotion Council for the Low Carbon Cities (PCLCC), which is comprised of 85 cities, 46 prefectures, 12 ministries, and 25 governmental organisations, which Kitakyushu City Government chairs²¹. To gain greater access to Asian cities in developing countries, it is recommended for PCLCC to collaborate with CITYNET, which has 73 member cities in developing Asia. In terms of financing new programmes, the Japanese government could support the platform secretariat both for technical co-operation and business promotion, while Japanese relevant private companies and business associations could support it both financially and with in-kind contributions. Collaboration between different platforms with different resources could cost less than creating a new platform, and enable optimum utilisation of complementary assets and capacities.

To examine the feasibility of the above mentioned international platform and its potential collaborative activities, further study and close consultation with potential stakeholders and partners are needed.

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Appendix

A. Attitudes of leading Japanese local governments towards international co-operation on low-carbon development

Kitakyushu city has shifted the focus of its strategy of international co-operation from the environment to the environmental business development in Asia²². Kitakyushu city will establish an Asian Low Carbon Centre in 2010 to promote dissemination of the city's environmental and energy technologies to Asian countries in order to benefit local businesses. Technical co-operation with non-Japanese local governments also would be focused on business promotion.

Yokohama's Global Warming Department does not prioritise international co-operation in their low-carbon development planning²³. Though Yokohama is the largest designated Eco Model City in Japan, it still seeks division of responsibility between the national and local governments in terms of implementation of international co-operation.

Kyoto has an experience contributing to the international co-operation programmes of JICA and MOE in the area of low-carbon development²⁴. For example, it trained local government officials from Bangkok city in Thailand and Bogor city in Indonesia for a short period of time. Kyoto considers it to be very difficult to directly communicate and coordinate with local governments overseas. Training people in their city is the easiest form of international co-operation. However, it is difficult to achieve significant visible outputs from short training programs. Kyoto officials believe that it is not easy to utilise knowledge and experience of Japanese local governments to address local problems in developing countries.

Minamata city has contributed to JICA's training programme on environmental management for a decade, based on the recognition and belief that the city should disseminate the experiences and lessons learnt of Minamata disease domestically and internationally²⁵. It will continue to co-operate with the JICA programme. Yet the city also thinks it is necessary to consider how to ensure that the training achieves clear results in the cities and countries that dispatched officials to Minamata. The city stresses that clearer outputs and effective follow-up actions are needed for accountability.

Hiroshima has conducted small-scale training on environmental management for Chongqing, China – a friend city of Hiroshima – and has been a member of ICLEI – Local Governments for

Sustainability²⁶. The city tried to develop a clean development mechanism (CDM) project in collaboration with cities in Asian developing countries, with support of ICLEI Japan, in 2008, though it did not materialise.

Kawasaki city has contributed to JICA's training programme in the areas of environmental management and has disseminated its experiences of nationally designated Eco Town, or Eco Industrial Park, in collaboration with United Nations Environment Programme (UNEP)²⁷. The city considers that collaboration with national government is necessary to implement international technical co-operation since the city government cannot bear the cost to dispatch officials to overseas and to invite trainees from foreign countries. The city intends to continue contributing to JICA's programme. The city also wants to disseminate environmental technology that belongs to companies in Kawasaki to Asian countries, with the information of expected reduction of GHG emissions attributable to installation of the technology.

B. Current state of environmental business promotion by Japanese regions and the support of METI and JETRO

In the Kyushu region, in particular the northern Kyushu region, the local governments of Kitakyushu city, Fukuoka city, Fukuoka prefecture and Nagasaki prefecture are interested in promoting environmental businesses in their jurisdictions to Asian countries²⁸. There is an organisation called Kyushu Recycle and Environmental Industry Plaza (K-RIP), which was founded in 1999 to support SMEs in environmental and recycling industry in Kyushu region, among businesses, academia and governments. This organisation is supported by the Kyushu Bureau of METI and subsidised by METI's Industry Cluster Programme. K-RIP assists local companies in terms of business development in Asian countries overseas. These local governments in the Kyushu region are enthusiastic about information exchange with K-RIP. Kitakyushu city is unique since it has set up a one-stop service for local businesses and foreign stakeholders managed by one integrated department that deals with both of international economic policy as well as environmental business and policies.

K-RIP experiences have demonstrated that the role of local government to promote international business development is limited except for two important roles: signing of agreements with foreign local governments, and long term follow-up and support for local businesses up to five to ten years²⁹. Since local governments do not necessarily have the capacity to accumulate knowledge and experiences of coordination between Asian foreign countries and Japan, a network coordinator such as K-RIP is important to support both of local governments and local

businesses. This coordination role could be played by a platform secretariat and national governmental support is needed to maintain this position.

In Kinki region, Osaka prefecture conducted environmental business development initiatives in Asia in 2007 and 2008³⁰. The original aim was to develop business agreements between companies in Osaka and those in Asian countries, and China and Vietnam were selected as potential partner countries. A report was made to identify and propose potential business models for local companies to adopt. Though Osaka prefecture does not have a sufficient budget, it aims to support individual companies cost-effectively through business matching events.

Hyogo prefecture, another prefecture in Kinki region located next to Osaka prefecture, established an organisation called Guangdong province – Hyogo prefecture environmental business exchange conference in 2007 to promote collaboration between companies in Hyogo prefecture and China to develop environmental technologies appropriate to China³¹. So far the business development has not been effective because of the language barrier in communication and small size of the budget of the secretariat which is supported by Hyogo prefecture. Since Hyogo prefecture has engaged in technical co-operation with Guangdong province since 1992 in the area of waste management and recycling, the prefecture considers there is an opportunity of technical co-operation between local governments in Japan and in China to disseminate the experiences of consensus building in the community and regulation development to promote circular economy in China. Such technical co-operation by local governments would be a part of business promotion activities in a broader sense.

Kinki Bureau of METI established Kansai-Asia Environment and Energy Saving Exchange Promotion Forum in 2008 to promote environmental business of Kinki region to Asian countries³². The activities of the forum include a) information provision of available supporting services to Japanese companies through seminars, b) dispatching business missions to China and Thailand, and c) signing Memorandum of Understanding (MOU) between Kinki Bureau of METI and Liaoning province of China regarding governmental support to international business collaboration to contribute energy saving in Liaoning province. The MOU was made during the national level periodic conference called Integrated Energy Saving and Environment Forum between Japan and China. The Kansai-Asia forum has a close tie with local governments such as Osaka prefecture, Hyogo prefecture and Kyoto prefecture as well as regional business associations such as Kansai Economic Federation and Osaka Chamber of Commerce and Industry. So far the engagement of local businesses is high. The Bureau intends to establish a low-cost information platform for companies to use the forum.

In Kanto region, Kawasaki city has provided support to local SMEs to extend their environmental technologies to Asian countries overseas, based on the request of the local companies³³. The city provided opportunities of information exchange and business matching through dispatching missions overseas and hosting international forum called Eco Tech Fair in Kawasaki. The city also made agreements with city governments in China, Korea and Vietnam so that SMEs in Kawasaki could start business networking and negotiations with companies in Asian foreign countries. However, without the support of national level organisations such as JETRO, the city government cannot provide meaningful support of business matching.. It is not easy to obtain tangible results of business deals so far.

Kanto Bureau of METI has also supported the environment and energy business development in Asian countries³⁴. It conducted a preliminary survey to evaluate the potential of deploying environment and energy business in Asia and established Kanto Environment Capacity Business Forum in 2008. It gathered knowledge and experiences of companies that had already started business in Asia overseas and sensitised local companies with the idea of Asian business development through seminars. The Kanto Bureau hosted business matching event in Shanghai, China in 2009. By means of establishing governmental relationship, the Bureau assisted the Shanghai business project aiming business development in Shanghai under the Greater Tokyo Initiative, a regional association of companies and local governments to promote SMEs' research and development capacity as well as marketing of advanced technologies. The Bureau also has had collaborative events with Kawasaki city, Saitama prefecture and other local governments in Kanto region.

Regarding Japanese national-level support to foreign business development, JETRO provides Japanese SMEs and other corporate with information services, consultation, study and others, as well as specific support of international inter-regional exchange programme called Regional Industry Tie-up Program (RIT) by making best use of existing intercity relationships between Japanese cities and overseas cities. The RIT provides local governments and companies with utilisation of JETRO's global network including its overseas offices, and with employment of coordinators both in Japan and overseas³⁵. JETRO experiences of RIT tell us that the support of public institutions that have capacity of business promotion across national boarder is vital in particular for SMEs to promote and maintain international interregional collaboration when it takes long time to follow-up (JETRO 2009).

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¹ Under this initiative, the study on applicability of Japanese model for pollution reduction in terms of technologies, regulation and human capacity has started, including the field studies in China, Vietnam and Indonesia. <http://www.env.go.jp/air/tech/ine/conf/2101.html>

² http://www.env.go.jp/press/file_view.php?serial=11475&hou_id=9759

³ <http://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/yushikisya/pdfs/oboegaki.pdf>

⁴ Chair's Summary, High Level Seminar on Environmentally Sustainable Cities under the Framework of the East Asia Summit Environment Ministers Meeting, 87-150, in IGES, *Key documents on Clean Asia Initiative (CAI) promotion: October 2009 – March 2010*.

⁵ Other international intercity network programmes for the environment such as ICLEI, Sustainable Cities, and C40 do not have such host cities, partly because to maintain neutrality among participating cities.

⁶ One to two cities will be designated as leaders in each country so that they lead surrounding cities to realise efficient environmental management.

⁷ Presentation at ICLEI Japan seminar on path towards low-carbon society, on 15 February 2010, in Tokyo, Japan.

⁸ Discussion during the above seminar.

⁹ From Hosei University (2010). Number of municipal governments which responded to the survey is 1,111. Municipal government includes city, ward, town and village in Japanese administration system. Prefecture governments, intermediate local governments between national government and municipal government in Japan, are not included in the study.

¹⁰ Based on the experiences of ICLEI Cities for Climate Protection in Indonesia and of C40/Clinton Climate Initiative's Degree 2 project in Indonesia.

¹¹ See Appendix for the current state of international environmental co-operation by several leading cities in this field.

¹² For example, Tjandradewi and Marcotullio 2009, Tjandradewi, Marcotullio and Kidokoro 2006, Seymoar, Mullard, and Winstanley 2009, Nakamura, Elder, and Mori 2010.

¹³ Nakamura, Elder, and Mori 2010.

¹⁴ Interview with Kanagawa Prefecture, Environment and Agriculture Department, Environmental Planning Division, on 27 October 2009.

¹⁵ Ditto.

¹⁶ Kitakyushu city has conducted Japan-China sound material cycle city co-operation projects, or Eco Town projects, with Qingdao, Tianjin, and Dalian of China, under the framework and support of METI since FY2007, 2008 and 2009, respectively. A company in Kitakyushu city has conducted a demonstration project in Dalian, China, for energy conservation of plant facility using a JETRO scheme since 2008. Concrete collaboration ideas between Kitakyushu Asian Center for Low Carbon Society and METI from 2010 are under consideration (Interview with Kitakyushu City Environmental Bureau Environmental International Co-operation Division, on 25 March 2010).

¹⁷ The METI's regional industrial clusters could include various business fields other than the environment.

¹⁸ Though Japanese cities may see themselves in competition each other in environmental business, the alliance makes sense since the SMEs interested in overseas business development are still a few (interview with Kyushu Recycle and Environmental Industry Plaza on 4 December 2009).

¹⁹ Interview with Kitakyushu City Government, Hiroshima City Government, and Kawasaki City Government on 17 August 2009, 2 December 2009, and 16 October 2009, respectively.

²⁰ This would also contribute to redefinition and revitalization of local environmental research institute, which itself has been an issue to be coped with. Kawasaki city started to revitalize its environmental research institute by adding new mandate of international co-operation through information provision.

²¹ http://www.kantei.go.jp/jp/singi/tiiki/kankyo/soukai_dai2/2siryo.pdf

²² Interview with Kitakyushu City, Environment Bureau on 24 July 2009.

²³ Interview with Yokohama City, Anti-Global Warming Department on 25 November 2009.

²⁴ Interview with Kyoto City, Environment Policy Department, Anti-Global Warming Office, on 26 October 2009.

²⁵ Interview with Minamata City, Welfare and Environment Department, Environment Division, Environment Planning Office, on 2 December 2009.

²⁶ Interview with Hiroshima City, Environment Bureau, Energy and Anti-Global Warming Department, Planning Division, on 3 December 2009.

²⁷ Interview with Kawasaki City, Environment Bureau, Global Environment Promotion Office, on 16 October 2009.

²⁸ Interview with K-RIP on 4 December 2009.

²⁹ Ditto.

³⁰ Interview with Osaka Prefecture, Commercial, Industry and Labor Department, Economic Exchange Promotion Division, on 27 November 2009.

³¹ Interview with Hyogo Prefecture, Environment Create Center, on 18 November 2009.

³² Interview with METI, Kinki Economy and Industry Bureau, Resources, Energy and Environment Department, Environment and Recycling Division, on 17 November 2009.

³³ Interview with Kawasaki City, Environment Bureau, Global Environment Promotion Office, on 16 October 2009.

³⁴ Interview with METI Kanto Economy and Industry Bureau, Resources, Energy and Environment Department, Environment and Recycling Office, on 18 November 2009.

³⁵ Interview with JETRO, Regional Industry Collaboration Division, on 17 November 2009.

