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## ORGANIZATION OF THEMATIC SEMINARS

(Item 4(a) of the provisional agenda)

Note by the secretariat

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## **I. Introduction**

1. Thematic seminars have been held under Kitakyushu Initiative to assist in the capacity building of local governments to meet urban environmental challenges. With changes in economic development and lifestyles, the challenges faced by cities have compounded which can be witnessed in the increase of waste, difficulties in responding to increasing demand on urban infrastructure, and increasing health and mortality rates. Thematic seminars were conducted to obtain understanding of the current state of the environment in local governments in the Asia-Pacific region and to provide a forum for the exchange of information on local environmental practices, both successful and unsuccessful. The seminars facilitated discussions on the transferability and applicability of successful practices to other cities, as well as the development and implementation of suggested policies and related activities. The topics for thematic seminars, namely solid waste management, public-private partnerships for urban environmental management, urban air quality management, and pollution control through industrial relocation, were selected based on demand of the local policy makers and research conducted on critical issues.

2. The first three thematic seminars were conducted to obtain an understanding of the state of the local environment, determine the challenges that local governments faced, and discuss transferable elements of successful practices. Other seminars are more city focused, gathering together cities to assess the activities of a specific local government and provide advice and/or information.

## **II. Outcome of the Seminars**

### **A. Thematic Seminar on Solid Waste Management (19-20 September 2002, Kitakyushu, Japan)**

3. The first thematic seminar was conducted over a two day period and included a half-day field visit to a can/bottle recycling centre, incineration plant, and final disposal site. In this seminar, local governments presented information on the status of household waste being generated, management practices, and measures directed towards improving the status quo.

4. Experts facilitated discussions on numerous topics, including methods to reconcile the issues of increases of waste and reduction at source. The sustainability and feasibility of eco-town projects in other countries, such as Bangladesh and India were also addressed. The practical application of experiences in Japan, such as the production of eco-cement, was a widely debated point; the transfer of experiences from city to city, as well as an appropriate balance of different purification technologies in order to design and operate final disposal sites was also examined. Further, the problems facing municipalities with regard to changing the attitudes of communities, user fees, outsourcing and concessions to the private sector in collection and final disposal, and the role of local governments were also addressed.

5. Other issues included financial shortages facing municipalities in the creation of waste disposal facilities and the importance of private sector participation in this area (BOT approach), as well as the significance of fines, collection fees, and regulations. The disparity in budget allocations for solid waste management in different municipalities, as well as jurisdiction, enforcement, and technology was also reviewed. Participants discoursed on the necessity of motivating and welcoming residents, including scavengers, into the overall waste management system. Participants concluded that the introduction of private sector participation is important to increase the efficiency of overall solid waste management. The importance of education through campaigns and the media was also debated to change the behaviour of people and raise awareness through the exchange of information and experiences.

6. The two-day Seminar concluded that the replication of successful practices and implementation of pilot activities is advantageous in providing necessary information to local governments for effective solid waste management. Discussants also determined that the transfer and application of locally appropriate technologies and enforcement mechanisms should be considered to address diverse situations and issues, and stressed the importance of public-private partnerships and building the capacities of local governments.

7. Table 1 prepared on the basis of seminar papers clearly demonstrates that the amount of waste varies with economic development; the composition of waste also differs accordingly. From the table, it can be seen that collection rates and treatment costs correlate to GNP and are on the rise. The scale of municipal budgets in Group A are small, however, the rate of expenditure for treatment fees in the overall budget is extremely large. In Groups A and B, informal collection is mainly carried out by scavengers; in Group C, collection is carried out by the municipal government.

8. Incineration is carried out by cities in Group C, as well as Chongqing in Group B. Incineration is an effective method to inoculate and reduce waste however, initial costs for the construction of facilities are high. Running costs are high when waste with high water content is generated, such as kitchen waste, and air pollution countermeasures for dioxins and soot and dust are necessary. However, incineration is a relatively safe and simple method of treatment for waste that should be separated and inoculated such as medical waste.

Table 1. Solid Waste Management in Selected Local Governments in Asia and the Pacific

City	<b>Group A</b> Dhaka, Kathmandu, Ulaanbaatar, Bhopal, Yangon	<b>Group B</b> Cebu, Nonthaburi, Chongqing, Surabaya	<b>Group C</b> Fukuoka, Kitakyushu, Macao
Gross City Product (USD)	1000 to 3000	3000 to 10000	Over 10000
Waste generation (kg/person · day)	0.3 to 0.6	0.7 to 1.1	1.4 to 1.5
Collection rate (%)	Less than 70	80-90	Approximately 100
Treatment fees (USD/Person · Year)	Less than 1	1-3	38-220
Rate of expenditure in total budget (%)	15.4 to 38	6 to 23.2	1.6 to 5
Recycling	Informal (Metal, grass, plastic, composting)	Formal + Informal (Metal, grass, plastic, composting)	Formal (Metal, grass, plastic, furniture, clothing)
Incineration treatment rate (implementing cities / total cities)	0 / 5	1 / 4	3 / 3

9. The seminar formulated the following recommendations:

The Kitakyushu Initiative should

- assist in the dissemination of environmentally friendly methods and technologies for the transfer of experiences such as the Fukuoka Method;
- assist in the use of information technologies for better management by cities including solid waste management;
- promote commitment of mayors, as well as community-based approaches in solid waste management;
- promote institutional capacity building through the organization of sectoral seminars and training;
- promote the exchange of experiences and successful practices to learn from specialized experiences of various cities through cooperation with the media and Internet-based tools;
- promote the conduct of pilot activities to attract attention from the donor community.

**B. Thematic Seminar: Public-Private Partnerships for Urban Water Supply and Wastewater Treatment (November 2002, Beijing, China)**

10. The seminar enabled information exchange between cities on leading experiences in public-private partnerships. Focus was placed on the varied projects and challenge being faced by the municipalities in urban water supply and wastewater treatment, including information on traditional build-own-transfer projects, the use of multiple financial mechanisms, and current trends and future strategies necessary to address PPP issues. The major objective of PPP is the provision of cost-effective and efficient services.

11. Experts facilitated discussions on the - difficulties of conducting PPP for sewerage projects in specific cities, various methods for collecting user fees, risk sharing, application of PPP principle in projects for water supply in rural areas, institution of Boards of Investment, subsidies by the national government (such as land and assistance for relocation), methods to fix tariffs, decision-making responsibilities, and the importance of market competition, as well as the improvement of efficiency of public works with the participation of the private sector. Successful practices for effective PPP were also identified.

12. Discussions highlighted differences between municipalities with regard to autonomy in the water sector, difficulties in changing attitudes of residents towards willingness to pay, and integration of these attitudes into the decision-making process. Ideas for improvement were also presented with regard to a pilot project being carried out in Weihai, China, that aimed to introduce the participation of the private sector in wastewater treatment.

Table 2. PPP Projects in Local Governments in Asia

<b>City</b>	<b>Project contents</b>	<b>Background</b>	<b>Characteristics / Issues</b>
Bangkok	Proposal and operation of reducing the number of leakages in water supply pipes by the private sector; BOT for water supply and purification by Provincial Waterworks Authority; commission to private sector for operation and management of wastewater treatment plants	Lack of technology, capital, staff to address increases in water demand	Management of public goods by government; lack of political will
Beijing	Construction and operation of water purification plants (BOT–23 years, foreign investment); construction and operation of wastewater treatment plants through joint ventures	Lack of capital; increase in demand; demand for improvements; host of Olympics	Restructuring of concession management system; effective use of capital
Colombo	Wastewater treatment through private sector investment (planned)	Lack of capital; diffusion rate for wastewater is 4%	Consideration of low rates (poverty-level); lack of interest by investors for areas with low revenue

Table 2. PPP Projects in Local Governments in Asia (Cont'd)

<b>City</b>	<b>Project contents</b>	<b>Background</b>	<b>Characteristics / Issues</b>
Ho Chi Minh	Water truck supply (concessionary management)	Necessity of hygienic lifestyles; high investment cost for connection	Awareness of residents that water is not free
Kathmandu	Private sector investment in water supply and water resource development	Improvement in efficiency and technology	Willingness-to-pay
Macao	Water supply projects, including collection of fees through concession contracts	National government policies; improvement in efficiency and technology	Inquiries regarding high fees
Manila	Water supply projects, including collection of fees through concession contracts	National government policies; high water leakage rates	Cannot achieve appropriate fees and service
Weihai	Industrial wastewater treatment through private sector participation (joint venture)	High pollution levels of industrial wastewater; economies of scale; polluter pays principle	No experience in this field; do not know how to proceed
Yangon	Construction of water supply pipes through private sector investment	Rapid industrial development, expansion of residential areas	Self-help programme

13. The above table (table 2) prepared from the data included in seminar papers show that Macao and Manila have an advanced level of PPP, where joint ventures are directly involved in retail water supply and wastewater services. After getting approval from regulatory bodies, the joint ventures are responsible for decisions and collection of tariffs. Because the private sector is responsible, they aim to improve efficiency and reliability to improve the customer base and profits. This may be of reference to Weihai, as retail wastewater services would also be part of the PPP contract there.

14. Beijing carries out PPP for bulk water services; this does not involve the joint venture in the retail business. Therefore, the efficiency of the services may not attain the required level. The government must pay directly for bulk water supply as per agreements and adjusted tariffs as per the contract, as well as collect the tariffs from the customers. However, this may result in more subsidies and insolvency for the public sector.

15. In cities such as Yangon, industries have joined together to construct secondary pipeline networks to connect to the public water supply. Because the government has a shortage of funds, this basic PPP may be considered as community-based, where communities participate on a "self-help" basis to improve access to the public sector water supply and sanitation facilities.

16. The main driving factor behind the introduction of PPP is lack of funds, as well as low efficiency which is responsible for the lack of investment, as the cost of production increases due to low efficiency, and cost-recovery is also at the minimum due to losses as a result of inefficient management.

17. Factors in the success of PPP include political will, management capacity of the administration, introduction of appropriate technologies, public awareness, and the creation of an attractive market for the private sector. During the seminar, differences in the levels of authority in water management, as well as difficulties in raising public awareness towards willingness-to-pay, and consensus in the decision-making process, were discussed.

18. The seminar made the following observations/recommendations:

- Necessity of conducting studies on PPP from investment, as well as environmental policy viewpoint.
- Acknowledged diverse conditions of countries and cities with regard to “willingness-to-pay” and necessity of public awareness.
- Significance of equity issues, with regard to the different levels of service in different districts.
- Importance of the role of government and the market.
- Competition to establish a conducive environment for PPP.
- Evaluation of systems to determine if economic and environmental effectiveness can be obtained.
- Consideration of the potential for symbiotic economic growth and environmental protection.

### **C. Thematic Seminar: Urban Air Quality Management (February 2003, Bangkok, Thailand)**

19. The third thematic seminar, held over a period of two days, covered three major areas: (i) assessment of the existing status of air quality in cities, major pollution sources and the impacts of pollution; (ii) policy response and management capacity of local governments, in particular measures adopted for enforcement of regulations and involvement of stakeholders; and (iii) identification of measures that could be adopted in the future to improve the role and capacity of local governments, including successful practices which could be effectively replicated.

20. Presentations by local governments showed that to counter air pollution from various sources, local governments have taken a variety of measures as follows:

- **Measures against vehicular pollution:** establishment of checkpoints and monitoring centres, “car free days”, fuel conversion, vehicle requirements with regard to particulate traps and diesel catalysts, expansion of public transportation facilities, encouragement and incentives in the use of electric vehicles and use of “intelligent signals” to address traffic congestion.
- **Measures against industrial pollution:** use of coverage sheets at construction sites, industrial relocation, introduction of cleaner production, guidance to heavily polluting industries.
- **Measures against household emissions:** improvements to heating stoves and fuel sources, conversion to centralised heating systems.
- **General measures:** development and implementation of legislation on air quality management, urban greening, collection of pollution fees, campaigns to increase awareness and encouragement of participation of stakeholders.

21. The third seminar also demonstrated that policy targets in air pollution management at the local level generally take the form of pollutant levels, i.e. SO<sub>2</sub> and PM<sub>10</sub>, however, if these preconditions do not exist, it is possible to use alternative criteria such as the proportion of vehicles that emit black smoke and fuel conversion ratios. The development and application of simple quantitative and qualitative indicators for air quality management was also highlighted.

22. Critical issues identified by the local governments included the lack of support in the form of top-level commitment, insufficient financing, low public participation and partnerships, lack of education, lack of economic incentives, difficulties in enforcement of regulations, and ineffective institutional coordination. The necessity of building the capacity of personnel in charge of air quality management was also cited.

23. One particular point discussed during this seminar was the number of overlapping activities that are being carried out by international initiatives. The necessity for collaboration in selected areas was stressed to streamline activities and coordinate actions.



Table 3. Major sources of pollution and countermeasures and targets for urban air quality management in selected cities of Asia-Pacific

<b>City</b>	<b>Major sources</b>	<b>Major countermeasures</b>	<b>Targets</b>
Bangkok	Exhaust from automobiles and 2-stroke motorcycles	Checkpoints, mobile inspection units, motorcycle units, pollution free roads, air quality reporting, engine inspection and tune-up services, public relation campaigns, use of coverage sheets at construction sites and by trucks, improvement of road shoulders and controlling road dust, inspection of white smoke from motorcycles, car free road, improvement of fuel quality, special engine devices, green fleets programme, increasing green areas, executive order in energy conservation, upgrade of motorcycle fleet, emissions from public buses, test of bio-diesel and diesel mix	Particulate matter (achievement of standard)
Hong Kong	Power plants, automobile exhaust	Ban of high sulphur fuels, conversion of taxi fleet to LPG, requiring older light diesel vehicles to be fitted with particulate traps and heavy diesel vehicles to be fitted with diesel catalysts	Reduction in number of smoky vehicles by 70%, Reduction of PM10 by 19%, Reduction of NO <sub>x</sub> by 16%
Jakarta	Automobile exhaust	Expansion of public transportation facilities, fuel conversion (gas, ethanol)	PM-18, PM-10, NO <sub>x</sub> , CO (achievement of standard)
Shanghai	Exhausts from industries (SO <sub>x</sub> , TSP from coal burning)	Industrial relocation (introduction of CP), fuel conversion, collection of pollution fees, daily information dissemination	SO <sub>2</sub> (within WHO standards), no increases in coal consumption
Kathmandu	Automobile exhaust	Public participation, greening, use of unleaded gasoline, encouragement of use of electric vehicles	PM10
Colombo	Automobile exhaust	Source identification, environmental monitoring, proper road maintenance, conversion to low sulphur and unleaded gasoline	
Tehran	Automobile exhaust	Conversion to CNG for buses and LPG for taxi fleets, promotion of unleaded gasoline for private vehicles, expansion of public transportation facilities, vehicle inspections, increase in number of intelligent traffic signals	Creation of master plan (fuel conversion rates, unleaded gasoline rates, etc.)
Kanpur	Automobile exhaust (leaded gas), industries (SO <sub>2</sub> , hazardous gas), dust storms	Road maintenance, clean-up, expansion of public transportation facilities, construction of parking areas, establishment of solar powered traffic signals	
Surabaya	Automobile exhaust	Automobile monitoring, car free days, awareness events, publication of environmental information	Air quality indicators (CO, NO <sub>2</sub> , O <sub>3</sub> , SO <sub>2</sub> , PM10)

Table 3. Major sources of pollution and countermeasures and targets for urban air quality management in selected cities of Asia-Pacific (cont'd)

Kitakyushu	Industrial emissions	High smoke stacks, use of low sulphur fuel, establishment of air pollution monitoring centres, energy and resource conservation production, conversion to gas fuel, public-private cooperation in SO <sub>2</sub> countermeasures, smog warnings	Smoke and soot, SO <sub>2</sub>
Dalian	Industrial emissions	Adjustments to economic and industrial structure and optimisation of city layout, adjustments to energy structure, promotion of use of clean energy, reformation of production methods and operation to promote industry-wide cleaner production	
Ho Chi Minh	Industrial emissions	Guidance to heavily polluting industries, introduction of CP (training, model projects), low interest loan for pollution mitigation (revolving loan), publication of industries that meet standards	CP introduction rates, TSP, CO, SO <sub>2</sub> , NO <sub>x</sub>
Weihai	Household emissions (use of coal in stoves)	Conversion to LPG, conversion to centralised system for heating, use of low-sulphur coal, high chimneys	User rates for gas, user rates for heating systems
Ulaanbaatar	Household emissions (use of coal in stoves)	Improvements in stoves, improvements in fuel	
Nonthaburi	Automobile emissions	Establishment of inspection days for automobiles, campaigns	

24. Table 3 providing data on major sources of pollution, countermeasures and targets set as based on papers presented to the seminar. It can be seen that large cities with high population concentrations such as Bangkok, Jakarta and Tehran, experience industrial pollution in addition to vehicular pollution which is a major issue. Success has been obtained in conversion to unleaded fuel, LPG, and LNG, as well as establishment and improvements to public transportation facilities.

25. Medium-sized cities, such as Kathmandu, Surabaya and Colombo, have seen a major increase in pollution from automobile sources, rather than industries. These cities have undertaken simultaneously conversion to unleaded fuel, as well as dust control measures such as road maintenance and clean-up, as well as road improvements and establishment of traffic signals to address traffic problems. NGOs and international assistance to expand the use of electric vehicles (3 wheelers) is being carried out in Kathmandu. Because the area of Kathmandu is small and travel distances are short, and hydro power is readily available.

26. In cities such as Shanghai, Weihai, and Ulaanbaatar, the main fuel source is coal. Major sources of air pollution are industries, as well as household stoves and heating systems. Countermeasures for immobile sources such as industries include the establishment of desulphurisation equipment and particulate traps, fuel conversion, and introduction of cleaner

production. Similar countermeasures have been taken by Ho Chi Minh, Kitakyushu, and Dalian. Countermeasures for household emissions include improvements to stoves and fuel, and introduction of a centralised heating system.

27. The seminar made the following conclusions/recommendations:

- Necessity of political will and commitment of local authorities and the public to formulate and enforce regulations. Capacity building for urban air quality management may target various issues (regulatory, institutional, participatory, financial, economic and appropriate technological measures). However, each city and/or country may have different priorities. This priority setting and implementation of capacity building activities should be demand-driven.
- Sub-national issues in urban air quality management have become important in some countries. This requires joint measures between cities. Hence, capacity building in this regard may address appropriate measures including emission trading and levy systems.
- Implementation of (1) pilot activities, (2) collection of successful practices, and (3) development of a common evaluation framework based on viable indicators. The pilot activities may start with political and awareness of officials and the public at large to promote voluntary actions leading towards enhanced mandatory measures. Some key areas for such actions may include inter alia, parking zones, car restricted days, congestion charges, monitoring of emission levels and resources for improved vehicular and traffic performance.
- Based on the idea of “scan globally and re-invent locally”, systematic training courses may be organised as a follow-up to this seminar. Successful practices in urban air quality management should be integrated into these training courses and may be promoted as a part of pilot activities, and be disseminated widely.
- International cooperation could become more effective if there is a well-established coordination among the various networks and initiatives, including CAI-Asia, ICLEI, UNEP/IETC, and JICA, among others. This will reduce redundancy of activities and strengthen current efforts through information sharing and pooling of resources and/or outputs for a holistic solution to urban air quality issues.
- Efforts should be undertaken to promote preventive strategies for urban air quality management through improved urban design and land-use policies.
- Restructuring of industrial and energy sectors should be promoted to improve urban air quality.
- Cities should be facilitated to adopt a systematic approach for analysis of urban air pollution problems (pollution levels and sources of pollution), followed by formulating and implementing the responses (measures) to overcome that pollution.

#### **D. Thematic Seminar on Industrial Relocation (August 2003, Ho Chi Minh, Viet Nam)**

28. The discussions in the seminar focused on (i) successful/unsuccessful experiences in relocation; (ii) experiences in selecting type of industries to be relocated; (iii) steps to carry out relocation programme; (iv) incentives or supporting policies; (v) sector focus (total urban planning, air/water/noise/other, technology improvements); (vi) governmental assistance: structures/frameworks to promote policies, financial incentives (MBIs, subsidies, taxes), buying/selling land (mediation, consulting), construction (factories, residential areas, treatment plants, access roads), technology (seminars, info dissemination, consulting, training); and (vii) strategies for “brownfields” development (pollution treatment, development of area)).

29. Presentations provided lessons in both successful and unsuccessful aspects of the industrial relocation programmes in other cities and countries. Issues, including the redevelopment of “brownfields”, were discussed and questions posed regarding the step-by-step process in industrial relocation.

30. The fourth seminar made the following recommendations:

- There is a need to move away from the “development first and clean up later” approach when dealing with urban environmental issues in cities;
- Industrial relocation should be well integrated into economic, land use, urban planning and environmental planning and policies; isolated industrial relocation can cause lots of problems. This essentially calls for long-term consideration;
- Industrial relocation should accompany process technology improvement to tap productivity and other benefits. End-of-pipe technology should play a certain role and there is a need to make sure that industrial relocation does not accompany “pollution relocation”. Technology can play an important role in all aspects especially tapping benefits from economy of scale in collective treatment systems;
- The proper management and clean up of areas from where industries are relocated is an important consideration. Brownfield management is becoming a major issue for U.S. and European countries; Asian cities should learn from lessons from these experiences regarding de-contamination of relocated areas as delay causes more problems and increase costs in terms of health and clean up costs;
- There are incentives or facilitation that the government can offer to relocate industries, with regard to relocation costs. Support for capital costs for relocation in the form of financial mechanisms, support for pollution abatement and process technology efficiency improvements, capacity building and skill enhancement for labour forces and other incentives or facilitation are important. Some of the successfully used facilitations include: land right to state-owned enterprises, tax

exemptions (income, city, corporate, fixed asset and facility taxes, subsidies towards labour training, interest rate reduction and swift loans, development of cooperative systems for sharing burden jointly, among others. The government is to play a key role in providing preferential policies, infrastructure development of relocated areas, and bringing all stakeholders into confidence; the government should play role as facilitator, as mediator and as consensus builder;

- The role of international institutions is to facilitate the sharing of international experiences amongst cities and learning from others' successes and failures;
- Industrial relocation can also help towards industrial clustering and utilization of waste of one industry by another and can help towards creating zero -emission industrial systems;
- Management of industrial estates are important as poorly managed estates can cause major environmental problems;
- Stakeholder participation is important, especially amongst government, private sector and residents. Mechanisms for partnership and interaction creates a conducive environment for industrial relocation;
- Seminars like these are important in providing a forum for all to share experiences and help all to understand problems from a variety of perspectives. This assists cities in evaluating whether they are on the right path or not and how to adapt to better management and systems.

### **III. Lessons learnt and utility of seminars**

31. While thematic seminars are a useful tool in gathering local governments together to share experiences and information, the seminars are not a means to an end. In the case of each of the seminars, follow-up should be conducted to ensure the relevancy of the issues to the local governments in the Kitakyushu Initiative Network. Examples include the development or revision of pilot activities following the conclusion of seminars, i.e. Dhaka (solid waste management planning), Weihai (feasibility study on the construction and management of centralised industrial wastewater treatment plant using public-private partnerships), Surabaya (involvement of stakeholders in improvement of urban air quality), and Ho Chi Minh (pollution control through industrial relocation). These seminars provide opportunities for local governments to obtain information on similar projects in other cities and network to enhance their own activities; such a case in point is intercity collaboration between Ho Chi Minh and Dalian (industrial relocation), as well as Kitakyushu and Nonthaburi (use of plastic garbage bags).

#### **IV. Issues for Consideration**

32. The thematic seminars held to date demonstrate the necessity of building the capacity of local governments in tackling urban environmental issues and illustrate the fact that both successful and unsuccessful experiences are tools in facilitating activities by local governments. The meeting may wish to provide guidance on:

- Continuance of thematic seminars, considering their relevancy to local governments and selection of potential themes;
- Follow-up activities, including on-ground projects, and expansion of activities at the national level in line with the four seminars already held;
- Development of thematic seminars and/or trainings in collaboration with other international organisations and/or initiatives.