

Urban Environmental Management Project

Hidefumi IMURA
Project Leader

1. Project name

Urban Environmental Management Project (UE)

2. Project period

April 1, 2001 to March 31, 2004

3. Expenditure in FY2001

Headquarters: 93,258,177 JPY (external funds: 9,834,220 JPY)

Kitakyushu Office: 61,869,629 JPY (external funds: 14,892,000 JPY)

4. Budget in FY2002

Headquarters: 110,662,000 JPY (external funds: 8,703,000 JPY)

Kitakyushu Office: 66,641,000 (external funds: 22,633,000 JPY)

5. Objectives

The ultimate goal of the urban environmental management project is to propose innovative ideas and models, which serve as guidelines of urban environmental management policies under the mega-trend of economic development in Asia in the 21st century. To achieve this goal, UE project has been conducting research in the second phase, based on comparative analysis and evaluation of the present condition and past experience of urbanisation as well as environmental problems in Asian cities. This research aimed at showing examples for policy options, institutional systems, technical options, urban planning, infrastructure development, and financial mechanisms for better urban environmental management.

Furthermore, in order to support related research projects and to propose more effective and efficient policy, UE project seeks to promote information gathering, analysis and dissemination. The Kitakyushu office is mainly dealing with these tasks.

6. Members and collaborators

[Project member]

- Hidefumi Imura (Project Leader /Director of Kitakyushu Office, Professor, Nagoya University)

Headquarters

- Xuemei Bai (Senior Research Fellow - Temporarily on leave for FY 2002, teaching at Yale University in the U.S.)
- Changki Kwon (Research Fellow)
- Kosuke Araki (Research Associate)
- Noriko Kono (Research Associate) (from November 2002)
- Kyoko Takada (Project Secretary)

Kitakyushu office

- Mushtaq Ahmed Memon (Research Associate) (from April 2002)
- Shobhakar Dhakal (Research Associate)
- Miao Chang (Research Associate)
- Keiko Sasaki (Division Head)
- Hidekazu Kakizoe (Division Chief)
- Christine Pearson (Division Chief)
- Kimiyo Wicks (Supporting Staff)

[External collaborators]

- Prof. Peijun Shi (China, Beijing Normal University)
- Dr. Ren Yong (China, State Environmental Protection Administration)
- Prof. Song Xutong (China, China Research Academy of Urban Construction)
- Mr. Hong-Cai Zhao (China, China Research Academy of Urban Construction)
- Prof. Kebin He (China, Tsinghua University.)
- Dr. Changhong Chen, (China, Shanghai Academy of Environmental Science)
- Dr. Byun, Byungseol (Korea, Korea Environmental Institute)
- Prof. Hee Yeon Hwang (Korea, Chung-Book National University)
- Dr. Kim, Moonhyun (Korea, Seoul Development Institute)
- Prof. Don-kun Lee (Korea, Sangmyung Univ.)
- Prof. Euiyong Yoon (Korea, Hyupsung University)
- Prof. Choon-Geol Moon (Korea, Hanyang University)
- Prof. A.P. Mitra (India, National Physical Laboratory)
- Dr. C. Sharma (India, National Physical Laboratory)
- Dr. A. Dasgupta (India, Institute of Radio Physics and Electronics)
- Dr. Sudhakar Yedla (India, Indira Gandhi Institute of Development Research)
- Prof. Hans D. Kammeier (Thailand, Asian Institute of Technology)
- Prof. Banasopit Mekvichai (Thailand, Mekong Environment and Resource Institute (MERI)/ Chulalongkon University)
- Prof. R. C. Rockwell (USA, University of Connecticut)
- Dr. Tae Yong Jung (Senior Research Fellow, IGES-Climate Policy Project)
- Dr. Shinji Kaneko (Associate Professor, Hiroshima University / IGES Visiting Researcher)
- Mr. Kawahara Hiromitsu (FUJITSU FIP, Inc.)
- Mr. Toshihaya Minamoto (FUJITSU FIP, Inc.)
- Dr. Akimasa Fujiwara (Professor, Hiroshima University)
- Dr. Toru Matsumoto (Associate Professor, Kitakyushu City University / IGES Visiting Researcher)
- Dr. Hirofumi Nakayama (Research Assistant, Kyushu University/ IGES Visiting Researcher)

7. Major activities and achievements

7.1 Study on the process dynamics of urban environmental evolution

Efforts have been made to formulate a research framework, such as making proposals for research funding from the Global Environmental Research Fund of the Ministry of Environment in FY2002. Research output will be produced through a restructured research framework based on the cooperation among in-house researchers at IGES Headquarters and visiting researchers from Hiroshima University and Nagoya University from FY2002 onwards.

7.2 Research on integration of an energy related policy in the Mega-cities of Asia

With external research funding from Asia Pacific Network for Global Change Research (APN) for FY2001 and FY2002, this project has been in progress in collaboration with researchers from China, Korea, and India. The workshop entitled "Policy Integration & Industrial Transformation towards Sustainable Energy Use for Cities in Asia" was held in Kitakyushu in January, 2002. A number of prominent researchers participated in this workshop from various institutes and international organisations and discussed the preliminary findings of the project and made presentations on the relevant studies.

This workshop was sponsored by APN, START (Global Change System for Analysis and Research and Training), the United Nations Environment Programme, the International Environmental Technology Centre (UNEP-IETC), and AEON Foundation. Moreover, the workshop proceeding¹ was distributed at

¹ Title: "Policy Integration & Industrial Transformation towards Sustainable Urban Energy Use for Cities in Asia:

both the Thailand Symposium on Sustainable Urban Development in Asia and WSSD (World Summit on Sustainable Development), held in FY2002. The report and CD-ROM were also distributed at WSSD, UNFCCC (United Nations Framework Convention on Climate Change), and COP7.

7.3 Support for implementation of the Kitakyushu Initiative for a Clean Environment and development of a network for inter-urban environmental cooperation

The “Kitakyushu Initiative for a Clean Environment” was adopted at the “Fourth Ministerial Conference on Environment and Development in Asia and the Pacific”, organised by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), in September 2000. With a mandate to improve the urban environment in Asia and the Pacific, the Kitakyushu Initiative is a mechanism designed to share experiences in environmental improvement and promote intercity cooperation, as well as strengthen actions taken at the local level. The IGES Kitakyushu Office conducts collection and analysis of successful practices in urban environmental improvement, and provides secretarial support for the administration of the Kitakyushu Initiative Network, under the supervision of ESCAP and the Government of Japan.

The “First Meeting of the Kitakyushu Initiative Network” was held in Kitakyushu (Japan) in November 2001, with the participation of 20 cities from 13 countries. The Kitakyushu Initiative Network was inaugurated at the Meeting, with the 20 cities that attended participating as core members of the Network. As of December 2002, the Network was comprised of 49 cities from 16 countries.

From FY2002, the Kitakyushu Initiative has organised thematic seminars on various topics, including solid waste management, public-private cooperation, and air quality management. These thematic seminars aim to introduce the effective implementation of practical policies and technology as well as to increase the capacity of policymakers through the exchange of information and policy discussions by cities with experience in these areas along with representatives of donor organisations and experts.

Analyses are being carried out on case studies presented at the Network meetings and thematic seminars as well as case studies collected in collaboration with overseas research institutes in China and Korea. These analyses are being conducted on the background of policies and concrete methods and outcomes, as well as successful elements, in line with a framework for comparative analysis and assessment. These analysed best practices will be of practical use for cities that use these cases as reference.

A number of quantitative indicators are being proposed under the Kitakyushu Initiative for target setting, measuring the effectiveness and success of policies, and periodic review and adjustment. A review of existing indicators was carried out and proved useful in providing an understanding of major issues, approaches, and usage of indicators to identify potential areas and methodologies to overcome obstacles. However, indicators for the Kitakyushu Initiative aim to evaluate the performance of individual environmental policies in specified regions and should be simple to understand by policymakers and stakeholders, measurable with available data, relevant to policies, policy responsive and analytically sound. In research conducted to date, a policy evaluation framework has been developed and selection of appropriate indicators has been proposed from results of analyses on policy case studies.

Information on activities of the Kitakyushu Initiative Network, outcomes of meetings, and successful practice analyses are available on the Network homepage (<http://www.iges.or.jp/kitakyushu/>). Outcomes from thematic seminars will be compiled into reports and distributed later.

8. Plan by the end of FY2003

8.1 Study on the process dynamics of urban environmental evolution

This sub-project has re-started from the middle of FY2002 in practice, with necessary restructuring of

the research framework. Under the new scheme, the project is to examine the relationship between the trend of industrial location patterns and urban environmental problems in Asia. The analysis seeks to draw policy implication on how to effectively integrate national spatial policy, regional industrial policy and urban policy to minimise the negative impact on environment.

In addition to the above tasks, in FY 2003, members of Headquarters and Kitakyushu Office will cooperate to develop indicators to measure the capacity of local government's urban environmental management, with effective utilisation of the hitherto collected data as well as conducting the hearing/questionnaire to related organisations.

8.2 Research on integration of an energy related policy in the Mega-cities of Asia

In order to compile the research outcome for the last two years, an international workshop was held at East West Center in Honolulu from February 4 to 5, 2003. In this workshop, the result of comparative-analysis among Tokyo, Seoul, Beijing, and Shanghai was presented and discussed. The analysis used future forecasting models of the energy consumption from such sectors as macro economy, transportation, residential & commercial, municipal solid waste management, and material flow. This workshop also received funding support from the AEON Foundation.

Furthermore, in FY2003, the project seeks the promotion of countermeasures and improvement of energy efficiency in Asian cities, through the application of this project's research results to middle-sized cities. Given this objective, a series of workshops are planned to disseminate the research outcome of the study and to find potential local collaborators for joint research in several Asian cities. The plan of the workshop has already been prepared and a proposal has been submitted to APN for funding support for FY2003. Furthermore, for dissemination and practical application of the research outcome, it is necessary to have a channel filling the gap between research and practice through a network of local city governments such as Kitakyushu Initiative Network. With this in mind, this project will explore the possibility of further collaboration with Kitakyushu Initiative.

8.3 Support for implementation of the Kitakyushu Initiative for a Clean Environment and development of a network for inter-urban environmental cooperation

The collection and analysis of successful practices in urban environmental management, as well as the organisation of thematic seminars will be continued. A major issue with regard to developing indicators is whether regional or local-level data is available in developing countries in Asia. In this situation, a two-step approach is necessary, with the establishment of a core set of indicators based on minimum data, followed by the refinement of a comprehensive set of indicators. In the future, appropriate indicators will be selected from the results of analysis on policy case studies. In addition, it is necessary to test the effectiveness of indicators in the implementation of pilot activities and other areas. To expand the usage of these indicators in the future, assessments and adjustments should be made as necessary. The combination of indicators and successful practices will play a leading role in setting and implementing policies, as well as assessing the performance of policy packages.

The Second Meeting of the Kitakyushu Initiative Network will be held in the summer of 2003, and there will be the review of the achievements of past thematic seminars, analysis of successful practices, and results of indicator research will be conducted, as well as the expansion of Kitakyushu Initiative Network activities.

A pressing problem in information dissemination and exchange is language, as well as differences in telecommunication levels in cities. It is necessary to identify potential collaboration points with respective national governments and NGOs in this regard.

8.4 Collaboration with other IGES projects

UE project seeks to collaborate with IGES LTP project in the Research on Innovative and Strategic Policy Options (RISPO) project by contributing research output and policy recommendation on urban

transportation and energy-related policies. The researchers in charge have already been identified and discussion among them has started on research content.

Another area of collaboration with LTP is the Asia-Pacific Forum for Environment and Development (APFED) endorsed by the 9th Ministerial Conference of Environment in Asia and Pacific (ECO ASIA9). APFED identifies “rural development, urbanisation and environment” as some of the key issues to which the UE project, which is in charge of drafting policy proposal of APFED, may be able to contribute research output as a project of IGES.

9. Assessments of major outputs (April 2001- December 2002)

9.1 *An aspect of influence on policy making process*

The international workshop held in Kitakyushu City in January 2002 had more than 80 participants who are mainly researchers in the relevant field, and government officials of the cities participating in Kitakyushu Initiative, as well as representatives of international organisations. The participants actively discussed the result of the study in FY2002 and built up a personal network. In addition, this workshop and symposium were mentioned in the newsletters of several international organisations, including APN and START.

9.2 *An aspect of timeliness to stakeholders' needs*

One of the world's most serious environmental problems is the environmental problem associated with the urbanisation of Asia, where a huge population is concentrated in urban areas, along with rapid industrialisation. The conspicuous feature of Asian cities is their absolute population that makes up half of the world's urban population. They are under stronger development pressure compared to those cities in Europe and in the U.S. The rapid population growth, economic growth, and the dynamism of urbanisation imply the danger of an increasing environmental burden and also a possibility of transformation towards a desirable development pattern by utilising new trends and changes in society and the economy.

Cities consume massive amount of resources and energy, and generate an environmental burden, which is creating new challenges such as countermeasures for global warming and the formation of a material recycle-oriented society in the cities in the industrialised countries. These challenges could better be dealt with in many Asian cities where infrastructure is currently lacking, by taking necessary counteractions in the early stage of urban development. The type of society, degree of environmental consciousness, lifestyles, urban infrastructure such as transportation, water and sewage, waste management systems in Asian cities have direct implications on the environmental problems at both regional and city level. Regarding global warming in particular, Asian developing countries are expected to play an active role in tackling the issue, and large cities with massive populations and economies are the places where practical countermeasures and policies are actively implemented.

Many cities in Asia have been suffering from poverty and thus have been unable to afford to pay much attention to such policies as industrial transformation policy for sustainable urban development. Recently however, there has been a positive movement in making efforts to tackle such hitherto neglected agenda. Therefore, proposing effective policy and its practical implementation measures is an important and pressing agenda for the cities in Asia, which is the primary objective of IGES-UE project.

9.3 *An aspect of uniqueness, originality and effectiveness*

Approximately half of the world's urban population resides in Asia, and it is no exaggeration to call the urban environmental problem an Asian issue. This project is unique in the sense that researchers from Asian countries work together to tackle those issues. Another characteristic of this project is the diversity of its members' academic and professional background, which strongly supports the inter-disciplinary nature of the research in this project through even more diverse personal networks of each researcher. Such networks also facilitate the formation of international joint research projects.

Furthermore, as part of the supporting activities for the Kitakyushu Initiative, IGES-UE project

manages the network of city governments in Asia, “Kitakyushu Initiative Network”. This network functions as a catalyst to collect practical information on urban environmental management at a local level to be reflected in the research, and to examine the feasibility of the policy proposal made by the research and provide feedback to the project. It is one of the features which enables this project to conduct practical and policy oriented research.

9.4 Others

The project has been involved in the task force of China Council for International Cooperation on Environment and Development and Chinese Sustainable Development (CCICED) for the study on the financing mechanism for environmental infrastructure. In relation to this task force, the Kitakyushu office co-organised an international seminar and task force meeting in Beijing, November, 2002 in cooperation with Japan Bank for International Cooperation and Development (JBIC). This task force is aiming to propose concrete, realistic measures, and an organisational framework for the Chinese government, based on the research results. The issues to be examined are:

- (1) Developing an effective financing mechanism for urban environmental infrastructure
- (2) Developing an effective financing mechanism for anti-pollution measures for Small-and-Medium-sized-Enterprises (SMEs)

10. Suggestions for improving the overall project performance in FY2003

As for “Study on the Process Dynamics of Urban Environmental Evolution” of the theme I, the team has been strengthened with a newly-joined researcher. Having recognised the importance of objective indicators for inter-city comparison in the study, the project put more emphasis on collecting and developing a statistical database and quantitative indicators. Statistical databooks, especially for China, have been actively purchased and converted into an electronic database, which is expected to improve the efficiency of the research.

As for theme 2, "Research on integration of an energy related policy in the mega-cities in Asia", the international research team of IGES in-house researchers and external collaborators from China, Korea and Japan, along with visiting researchers, will continue to work. It obtained continuous research funding from APN for FY 2001 and FY2002 and a proposal for FY2003 funding has already been submitted. The next step is to complete the analysis on Tokyo and Seoul, Beijing, and Shanghai and then expand the scope of the research into other Asian cities, and support them when they take actions for the improvement of energy efficiency and the mitigation of global warming. Furthermore, for dissemination and practical application of the research outcome, collaboration with the Kitakyushu Initiative will be further strengthened.

As for the “Kitakyushu Initiative” which is theme 3, financial support was also provided from both the Ministry of Environment of Japan and ESCAP secretariat, and information gathering and good practices of urban environmental management has been carried out. However, a full and detailed investigation of the collected information has not been completed yet; this will be the emphasis for the rest of the second phase. Information gathering, analysis, and the development of stronger networks will be attained by holding workshops on such practical themes as “solid waste management” and “financial mechanism for urban environmental infrastructure”. At the beginning stage, the primary task was to gain wider recognition for the activities of the “Kitakyushu initiative”, which has been referred to in the action plan of the World Summit on Sustainable Development (WSSD). From now on, it is necessary to tackle the production of tangible outcome. Moreover, the information on good practices gathered and analysed by this initiative has been organised thoroughly as policy options, and they are introduced as input of the RISPO’s Strategic Policy Options, pursued by IGES LTP project.

11. Self-evaluation of the overall performance of the project (April 2001-December 2002)

Details omitted.

12. Proposal of the third phase (FY2004-FY2006) research project

12.1 Role of Urban Environmental Studies in Strategic Research of IGES

Cities are concentrated areas of environmental problems; the result of mass consumption of resources, and mass generation of waste. Consequently, continuous research focusing on cities is a meaningful topic for IGES. However, the priority and conditions of the urban environment vary from city to city. Facing such a multitude of urban environmental problems, random actions taken by cities do not produce concrete solutions, nor is it conducive to provide strategic options. In this regard, it is necessary to consider what strategy research would be beneficial

The Plan of Implementation, issued after the World Summit on Sustainable Development (Johannesburg 2002), emphasises the importance of urban environmental governance in various paragraphs. Moreover, it includes the Kitakyushu Initiative for a Clean Environment, one of the sub-themes of the Urban Environmental Management Project, as one of the means to achieve sustainable development in cities in Asia and the Pacific. Hence WSSD endorses IGES' contribution to the urban environment and supports the need of such contribution. This support will lead UE to make further efforts in this regard.

12.2 Support for Local Level Activities

In addressing local problems, initiatives taken at the local level are indispensable. However, there is a large number of cities in Asia where there is often a lack of clear understanding of the issues and no appropriate information or know-how regarding policy actions. In this situation, the role of the urban research programme at IGES should focus on the common concerns of cities in different Asian countries, as well as collect and analyse successful practices ("good practices") that are universal and have a high potential for transfer to other cities. In disseminating these experiences and know-how, new trends can be identified, and policy concepts developed by stakeholders, as well as measures to solidify those concepts, can be presented. Towards this end, it is essential not only to conduct research on the issues themselves, but also to create a forum where policymakers of different cities can gather to share knowledge on common issues. IGES researchers, using their base of knowledge acquired through the pursuit of individual research themes, should oversee the development and promotion of this type of international collaborative work.

12.3 Strengthening of intercity networks and policy actions to provide solutions for common problems

From this standpoint, the Kitakyushu Initiative should continue to be strongly promoted and the linkages with other intercity networks should be deepened to contribute to identifying solutions for common problems of Asian cities. In addition, the systematic development of a scientific and knowledge database, as well as its function as an information clearinghouse will be improved and strengthened. In order to achieve this objective, enhanced collaboration between Headquarters and Kitakyushu office is necessary, with uniform research and policy practices promoted. In more concrete phases, scientific analysis and research related to common policy issues in Asian cities will be continued by researchers in Headquarters, while the focus of the Kitakyushu Office will be placed on the development of intercity network, sharing of information on common themes, and promotion of dialogue for policy development.

12.4 Research themes in Headquarters

With consideration of the division of roles as outlined above, research will be carried out in Headquarters under the following themes, with the participation of a number of cities in different countries.

- Development of a system for the division of roles and mutual cooperation between the government (public sector) and businesses (private sector) for urban environmental improvement.
- Identification of financial demand perspectives and financial procurement methods for urban environmental improvement; development of proposals for the procurement of new sources of revenue and financial systems.

- Improvement of resource recycling in cities, identification of appropriate waste management methods, creation of a system for resource recycling, technology development
- Rationalisation of energy use in cities; energy conserving urban improvement strategies; urban planning to simultaneously achieve cost reductions, energy saving techniques, and prevention of air pollution; particular focus on transportation systems.
- Analysis and policy recommendations for common issues arising in Asian cities and elsewhere.

12.5 Role of Kitakyushu Office

- Promotion of common activities involving a number of cities in Asia; promotion of the achievements of the Kitakyushu Initiative, with the objective of the ESCAP 5th Ministerial Conference in 2005.
- Development of an international intercity network and information dissemination for this purpose.
- Compilation of the research results of Headquarters as a menu of policies to be implemented at the local level; dissemination for widespread use.
- Analysis and assessment of successful practices in urban environmental management.
- Organisation of workshops to assess urban environmental management performance of a number of target cities.
- Organisation of intercity network meetings. Promotion of collaboration with other intercity networks, such as International Council for Local Environmental Initiatives (ICLEI) .

12.6 Organisational Structure

Under the following structure, there will be more unified collaboration between Headquarters (research) and the Kitakyushu office (development of an international network and policy discussions).

- Headquarters --- Project Leader (1), Senior Research Fellow (1), Research Fellow (1), Research Associates (2), Project Secretary (1)
- Kitakyushu Office --- Director (Project Leader at Headquarters), Research Fellow (1), Research Associates (2), Administrators (3 [-Division Head 1, Division Chief 2])

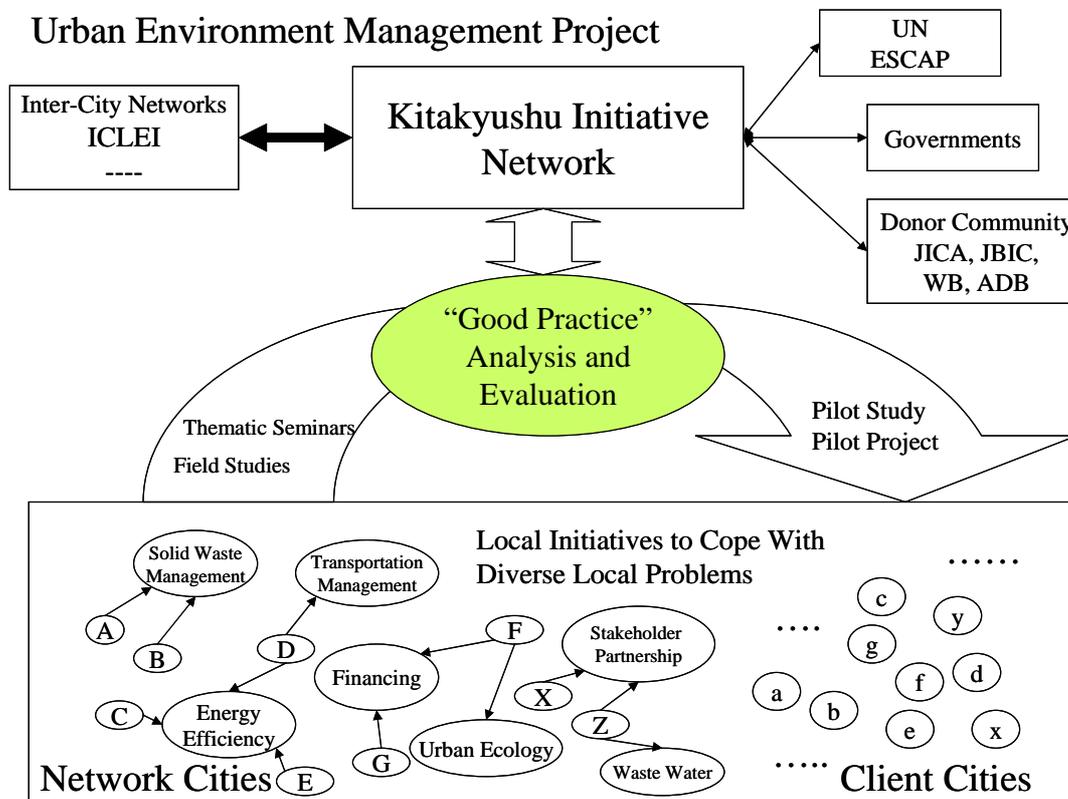


Figure 1: Urban Environmental Management Project Concept